

ARCHITECTURE SUPPLEMENT

JANUARY, 1898.

Architecture Supplement.

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"Architecture" Calendar.

JANUARY.

- 3.—General Meeting of the Royal Institute of Architects of Ireland.
- 4.—Auctioneers' Institute. Mr. G. B. Matthews on "House and Estate Agents' Commission."
- 7.—Birmingham A.A., Mr. John Amphlett on "Worcestershire County History."
- 10.—Liverpool Architectural Society. Mr. Beresford Pite, A.R.I.B.A., on "The Architecture of Michael Angelo."
- 11.—Sheffield Society of Architects. Mr. W. C. Fenton on "Sanitary Engineering in Connection with Buildings."
- 14.—A. A. Mr. F. T. Baggallay, F.R.I.B.A., on "Composition in regard to Public Buildings."
- 17.—R.I.B.A. Award of prizes and student-ship, preceded by business meeting.
- 19.—Northern Architectural Association. Mr. G. T. Brown on "The Stones used for Building Purposes in Northumberland and Durham."
- 20.—Annual Dinner of the Liverpool Engineering Society.
- 24.—R.I.B.A. President's Address to students. Liverpool Architectural Association. Mr. R. L. B. Rathbone on "Brass and Copper Work."
- 27.—Glasgow Institute of Architects. General meeting.



HOUSE DECORATION.

AT the last meeting of the Architectural Association, Mr. L. A. Shuffrey read a most interesting paper on house decoration, treating it from the practical rather than the aesthetic side. It was certainly one of the most useful papers to which we have listened for some time, and well deserves lengthened consideration in these columns. Referring to exterior work, he said the only satisfactory feature about painted cement work was that it kept the wet out. The money spent on the painting of cement fronts in London would have paid for the use, in many cases, of Portland stone or rubbed brick—the two materials which Mr. Shuffrey considers to be pre-eminently suited to the London atmosphere. In the subsequent discussion, Mr. Cole A. Adams took up the question of painting cement work, instancing the buildings in the Regent Street Quadrant, the occupiers of which are compelled to give one coat of white paint to the fronts of their premises every year—a troublesome and expensive condition, but one which, nevertheless, gives a brightness that is agreeable. Here, of course, we are brought back to the necessity for an infallible distemper that will stand the eccentricities of the English climate, and, providing it is used under favourable conditions so that it has time to harden before unpropitious weather arrives, the writer of the paper mentioned Duresco as very suitable for outside stucco.

Mr. Shuffrey then passed to the interior, advising architects to specify for five coats of paint on new wood—instead of four, which he regards as only just enough—and suggesting that if it was intended to paint new walls they should be plastered with Parian or Keene's cement. As to the claim for Adamant plaster that it could be painted in twenty-four hours, the author's experience was that it was somewhat inconsistent with absolute safety where cement had been used, as the salt from the Portland would continue to come through for weeks. Unfortunately, Mr. Shuffrey has not tried the wash of barium chloride recommended to obviate this, and we should like to have the opinion of some who have made the necessary experiments. We certainly had understood that Adamant could be painted upon at almost any time after the chemical action

has taken place. The difficulty arising when cement is used is the result of the wet bringing out the sulphate of soda, which crystallizes when it comes in contact with the air on the face of the plaster. The action of the barium chloride is to render this soda insoluble, and from enquiries we have made since Mr. Shuffrey read his paper the treatment seems to have been most successful. About 7 lbs. of the barium chloride is dissolved in a large bucket of water, and the face of the brickwork or the coat of plaster is then washed with the solution. Now that Fletton bricks are being so extensively used in London in place of stocks, the point raised as to the discolouration of walls in patches was very timely. This, it appears, is caused by using overburnt bricks, and they should not, therefore, be allowed in inside work. Where such discolouration has taken place the cutting out of the brick is the only remedy. In that part of the subject dealing with wall-papers, approving reference was made to many of the embossed coverings now available, and also to the luxurious finish given to walls by covering them with silk damask or brocade—unfortunately, these are rather expensive, and they have, of course, a tendency to harbour the dust. We should prefer to see the adoption of such papers as those made by Messrs. Essex & Co., and other firms, which have the fine effect of silk, and other textiles, while possessing none of the disadvantages which result from the use of the actual material.

DECORATIVE TREATMENT.—Having urged on the necessity for the three primary colours to be represented in any effective scheme of decoration, Mr. Shuffrey proceeded to deal with the points that should influence the decision on a decorative treatment. For the walls of the vestibule he advised a lining to a height of about 4 feet with Dutch tiles, and deplored the use of varnished papers, which had nothing but their durability to recommend them, and which were so susceptible to changes of temperature. In this opinion he had the support of the chairman (Mr. Hampden W. Pratt), who agreed that a dull effect was what was wanted rather than the bright effect which colour gave. Speaking of the backgrounds for oil paintings, the flock paper in the entrance-hall of the National Gallery was commended. This is painted in two tones of a mellow dark green, inclining to olive, and pleasantly contrasted with dull red marble columns. Many will agree that the neutral green of Morris's at South Kensington is too cold for the purpose, while probably the majority of our readers would not care to withdraw the red so generally adopted. In conclusion, Mr. Shuffrey—who was accorded

a well-deserved vote of thanks—said “the coloured decoration of a room should be the conception of one mind, and the plan I advise is to make your scale sketch and stick to it as you would to your one-eighth scale drawing in a building. A constant study of colour brings great enjoyment with it. As you study old buildings to improve your sense of form and proportion, study natural objects for improving your colour sense. The most unlovely object if left alone will be covered by nature with the most beautiful colours, and the book is open for our delight.”

HIGH RELIEF DECORATION.

WITH the advent of the dado in room decoration came a host of new materials to produce the effects of carved and decorated woodwork. Amongst these materials were some which were difficult to manipulate owing to their thickness and weight. Most of these adhered to low relief designs. Only a few years ago Mr. John R. Nesbitt, son of the well-known landscape artist John Nesbitt, of Edinburgh, along with Mr. Thomas Hall, of George Street, Edinburgh, and 25, Great Portland Street, London, a noted decorator, formed the Cordelova Company with the object of making a light decorative material in high relief. The energy and enterprise which has characterised this company since its formation has brought their material to the front with a rapidity which is remarkable. Much of the success which has been attained is doubtless due to the unique combination in the managing director and secretary, Mr. Nesbitt, of a sound art training with a wide commercial experience, along with inherited artistic aptitude, and to the fact that the

in Pitt Street, Edinburgh, despite considerable additions, will require enlargement to meet the growth of business. A visit to these premises reveals quite a bewildering variety of patterns, only vying with each other in chasteness and originality of design. No expense has been spared to procure the finest possible results, and the pattern books



CORDELOVA PANEL—"RUBENS."

show what remarkable artistic results have been accomplished. The result of practical experience and the testimony of those who are well qualified to judge from experiment, places the durable and sanitary qualities of Cordelova on the same high plane, and two bronze medals have been awarded the



CORDELOVA HIGH RELIEF CEILING. DESIGN NO. 167. MADE IN PANELS 21½ IN. SQ.

chairman of the company, Mr. Hall, is a practical man who has handled decorative material and knows what is wanted.

It is certainly the fact that the premises

company by the Sanitary Institute at their meetings at Newcastle and Leeds. There are no less than three hundred original designs in high and low relief, but architects

can have their own special designs produced at a low cost, Mr. Nesbitt having made it his special care to accomplish this with celerity, accuracy and economy.

There are two special developments in the business of the Cordelova Company: one the production of high relief work for ceilings, friezes, &c., and the other, that of hand-painted decorative work. It is in the former department that the chief prominence is claimed. The extreme lightness of the material, the ease in hanging, and the boldness of relief, point to its rapidly superseding modelled plaster work. To obtain 1½-inch relief work in endless variety of design, so arranged that in matching no embossed part is ever cut through, is a novelty in combination which the decorator cannot resist, and the advantages of which the architect must recognise. To the latter also the panels and reproductions in carved oak will be a welcome feature. The artistic manner in which oak is imitated is quite a revelation. Old leather effects are also cleverly reproduced, making Cordelova useful for fire and draught screens.

The hand-painted decorative work is a special feature for which the company employs so large a staff, that orders can be executed in from eight to fourteen days. It is here again that Mr. Nesbitt scores. His artistic predilections result in the production of harmonies of colour which are most captivating. Richness and variety is characteristic of all the work done, and waste is avoided by exact lengths being supplied. To the decorator, a great recommendation of this material will be that its extreme lightness enables it to be handled easily, it reduces the cost of carriage—a circumstance which accounts for the large colonial trade which the firm does—but of even more importance is the fact that no soaking is necessary, and the minimum of shrinking is therefore obtained. Joints are made neatly, and there are no unsightly gaps to be filled in with putty, &c. Labour is thus reduced, and the cost of working with Cordelova, it is claimed, is small by comparison.

There are twenty-eight new designs for the coming season, and these include some very fine examples of the latest artistic developments.

The illustrations here presented include a high relief ceiling of French design and a dainty classic frieze. The Rubens' head is an example of the perfection which the company have attained in their methods. This, when decorated and framed, would readily pass for a genuine Florentine bronze panel.

Furnishing Exhibition in London.

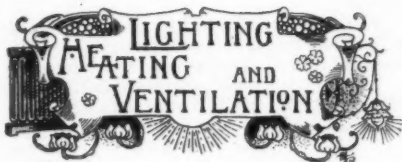
THE forthcoming International Furnishing Trades Exhibition and Market, to be held during March at the Agricultural Hall, is likely to be even far more successful than its predecessor, and so great have been the number of entries, that all the available space adjacent to the great hall will be requisitioned. There will be thoroughly representative displays of leading furniture designs, and we hope some regard will also be paid to really artistic furniture as well as to the ordinary commercial effects.

THE "GLOUCESTER" DIARY for 1898 has been again issued by the Gloucester Railway Carriage and Wagon Co., Limited, Gloucester. We note a useful feature in the "Directors' Calendar" on pages 24 and 25 to assist professional men who have fixed engagements on certain days of the month.

PRESENTATION.—The staff of Messrs. Eastwood & Co., Limited, have presented the secretary of the company with a handsome silver bowl bearing the following inscription: "Presented to George E. Wragge, Esq., by the staff of Messrs. Eastwood & Company, Limited, as a token of their regard and esteem, 10th December, 1897."



CORDELOVA FRIEZE.



"LEICESTER PLENUM" SYSTEM.

SOME attention is being directed to the merits of the "Leicester Plenum" system of warming and ventilating, which has been successfully applied in many provincial Board Schools; in the Rutherford College, Newcastle-on-Tyne; in County Council buildings at Leicester, Stafford, Derby, Gloucester, Nottingham, and elsewhere; and in many leading public buildings throughout the kingdom. We believe the McEwan Hall at Edinburgh, recently opened, was fitted with the system—a fact which influences us in briefly detailing the principles of the plan.

An air inlet is provided from a source never less than 8 ft. high, and in it is fixed a screen of jute cloth, strings of worsted, cotton wool, or wool in its raw state. A fan is fixed and driven on the delivery side. The air from this is propelled forward into underground trunks—large, spotlessly clean, and well lighted—and Messrs. Ashwell & Nesbit, Limited, point out that the heating surfaces should never, save in very small and compact buildings, be all massed together. The success or otherwise of the "Plenum" system depends on the ability to control the temperature of the incoming air without altering its volume. In the patent battery chamber and mixing arrangement associated with the plan, this perfect control is ensured for any one particular room in the building. The heating surface on the battery may be warmed by steam or hot water, and should be arranged in two parts, so that with the main pipes in the trunks three ranges of temperature are provided—an important consideration when the fickle character of our climate is remembered—and certainly none can forget it in such weather as lately experienced. The vertical flues taking the warmed air into the different rooms lead out of the battery chamber, and are each fitted at their base with a special valve arrangement, by which the quality of the air is regulated, the valve, if desired, being actuated from the room.

HOB BASKET GRATE.

SOME years have passed since Messrs. R. H. & G. Pearson, Limited, first made known the advantages of their "Rumford Teale" and "Rumford Armstrong" fireplaces, which now find a place in many places of architectural note. Constructed on the principles advocated by Count Rumford and Dr. Pridgin Teale, they secured their reputation from the possession of two important features, viz., economy of fuel with a maximum of heating power.

In the Hob Basket grate, which the same firm has introduced, these merits have been retained, but a more artistic appearance has been given the grate. The glazed bricks are inserted in different colours, and the canopy may be of hammered iron with brass moulding or in polished brass or copper—according to fancy.



HOB BASKET GRATE.

In the Hob Basket grate, as well as in the others we have mentioned, the preponderance of fire-clay in their construction is a notable feature, while the absence of all metal behind the back and sides enables a greater thickness of fire-clay to be used—with the consequently lessened liability of fracture. A large proportion of the heat from the fuel accumulates in the fire-clay, and is subsequently given off into the room. It should be noted, too, that the back, baffle and sides of these stoves consist of six

separate blocks of fire-clay, thus doing away with the likelihood of unequal expansion and contraction—a source of worry and trouble in many fireplaces where there is a large surface of fire-clay in one piece. The only ironwork in the stoves, actually in contact with the fire, is the bottom grate and the front bars.

Possessing these good qualities and the most effective arrangements for the receipt of ashes, the Hob Basket grate of Messrs. R. H. & G. Pearson, Limited, should prove acceptable in houses where some regard is paid to appearances. At their showroom in Notting Hill Gate they make a fine display of these grates variously, and in every case, most artistically tiled.

ANOTHER suburban theatre has been opened during the month, viz., the Broadway Theatre at New Cross—designed by Mr. W. G. R. Sprague. Messrs. Waring and Gillows, Ltd., were responsible for the decorations, basing their scheme on one of the styles of the Italian Renaissance. A most effective interior has thus been provided, the prevailing tints being cream, scarlet and gold.



Pipe Joints.

WHEN first made sanitary pipes had no sockets; afterwards a shallow socket was added, and joints were made with clay or cement, &c., which answered fairly well in good ground, but were very unsatisfactory in wet or marshy places. When sanitation became a science, and drains were tested by water or smoke after they were laid, it became evident that a more efficient and effective joint was necessary.

Stanford was the first to make a real advance in this matter, and the joint known as the "Stanford joint" is even yet in large demand. It is very good and efficient for certain works, but architects and surveyors sought for a pipe that did not rely on one simple joint alone, but which had a second line of defence should the first from any cause prove inefficient, and many variations of Stanford and cement joints were introduced, perhaps the best of which consisted of two Stanford joints having a cement joint between.

Messrs. Oates & Green, Limited, early attempted to improve the joints of their pipes and took out several patents, each marking a step in the right direction, their last improvement being Green's patent "Truinvert," which appears to meet every requirement and has advantages peculiar to itself.

This joint is formed by making an inner shoulder in the socket of the pipe, and by a composition joint on the outside edge of the socket, with room for cement between the inner shoulder and the outer composition joint. By this means perfect alignment of invert is given, three joints are made all gas and water tight, and the inner shoulder of the socket is strengthened at its weakest point. One of the most useful features of this joint, from a sanitary point of view, is that it acts as a detector. The ease with which these pipes are laid, and their absolute reliability under the most severe tests and conditions, are their best recommendation.

FIREPROOF CONSTRUCTION.

Some Materials and Methods.

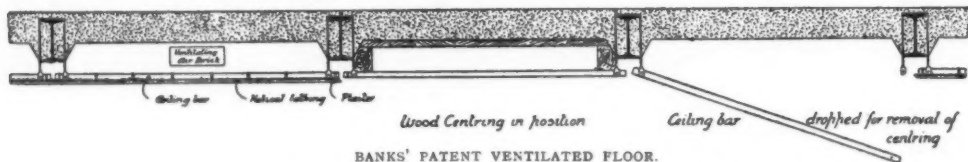
I.

WHILE business men frequently smile at the antiquarian studies of old ruins and "ivy-mantled towers," they frequently perpetuate antiquated notions and time-worn notions in new buildings. That may be seen after many fires of moderate extent, when, in rebuilding, ancient follies and dangerous theories are re-embodied in wood and mortar. It requires a fire of the proportion of that which has cleared four acres of the City of London to impress upon men the hazardous character of many modern structures. Several of the premises destroyed in the late fire were comparatively new—splendidly matchboarded and with excellent timbering—and they fed the flames quite as

which may now be seen from the Thames Embankment, approaching completion. In place of the usual cast-iron columns, Messrs. Richard Moreland & Son, Ltd., are putting in solid steel columns. A triple advantage should result as compared with the ordinary cast-iron columns. Firstly, they will take much longer time in becoming thoroughly heated; secondly, when water falls upon them when hot, no such damage would occur as in cast-iron columns; and thirdly, they occupy considerably less space. For instance, an 11-inch solid steel column is being put in where one of 16 inch diameter would be required if cast-iron were used—a fact of considerable importance where economy of space is required, and, as in the case of the Carlton Hotel (also being fitted with these columns), where decorative material will be employed to hide them from view.

of modern fireproof buildings. Experiment has shown that a fierce fire can play upon a ceiling formed under this system for three-quarters of an hour without melting a block of ice placed on the floor above or cracking the plaster in any way. The floor which we illustrate has the joists spaced from 3 ft. to 4 ft. apart, and over them are steel hanging-straps to support the ceiling-bars which are attached to the straps by bolts. On the upper side of the ceiling bars are placed wood runners bevelled on one side. These carry the boards to form the centring for the concrete. When the concrete has set, one bolt in the ceiling bar is removed; the bar falls, freeing the runners and wood centring, which can then be taken down for re-use.

The same syndicate has also introduced a light and strong fireproof partition, equally necessary for preventing the longitudinal progress of fire. Here again helical lathing forms the principal feature, and the partitions, being never more than 3 in. thick, have been largely adopted in flats, where their economy in space as compared with the half brick and stud partitions, has given them much popularity.



BANKS' PATENT VENTILATED FLOOR.

well as the older buildings. We are glad to learn, however, that in rebuilding the Cripplegate area many systems of fire construction and several fire-resisting materials will find a place. From all quarters we hear of inquiries as to the best practical plans; and apparently everyone concerned in rebuilding the premises is desirous of restricting the effects of any future outbreak in that locality. Of course, where the evils of narrow thoroughfares and high building are combined, no effectual guarantee of preventing the spread of fire can be made, but certainly anything that tends to arrest the advance of the flames should be considered.

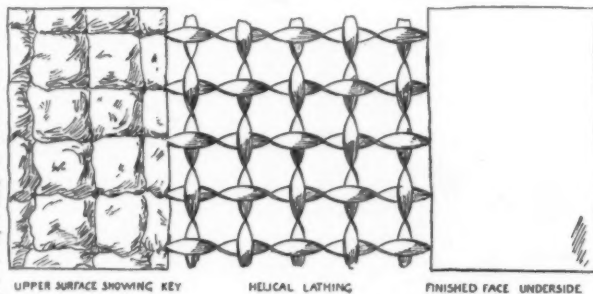
Without seeking to minimise the necessity for careful planning, we would emphasise the fact that nothing should be said in depreciation of the value of fireproof materials. Plenty of exits rightly placed may result in people escaping from a fire, but obstacles placed in its way must also be regarded, and especially in warehouses; every wall, every partition, and, in fact, everything should be of such a character as to resist the progress of the flames. That this is generally recognised may be concluded by the various schemes of construction and materials before the public, claiming to effect such a result. Some of these we propose to review in our columns, setting forth the main features of the most useful plans, the results of experiments, and places where they can be seen. In the absence of any authority before which reliable tests can be made and their results proclaimed for the public safety, there is, of course, much controversy as to the most efficient methods. All this discussion is useful in exposing the weaknesses of the least desirable as well as in making known the main points to be considered, and in placing before our readers an impartial *resumé* of the various plans that seem most likely to effect their purpose, we feel we are contributing a useful and practical chapter to the literature of the subject.

Steel Columns.

RATHER an innovation is being introduced into the new premises for the *Daily Mail*,

Banks' System of Fireproof Construction.

A SYSTEM that has been favourably noticed by many leading architects, and which may be seen in the largest hospitals of the Metropolitan Asylums Board, the great London Hospital, Guy's Hospital, and many of the principal flats and large hotels, is that brought out by Banks' Fireproof Construction Syndicate, Ltd. The main feature consists in the interposing of a suspended fireproof ceiling, which is virtually separated from the floor requiring protection, it being deemed by the inventor equally necessary to shield from the flames the steel joists of so-called fireproof floors, as it is to protect the ordinary wood joists. It will be readily recognised that so long as the ceiling remains intact a free current of air can circulate above it and



below the floor in a space of 2½ inches, according to the system under notice. We illustrate the helical metal lathing of which the surface of the ceiling is chiefly formed. This is composed of steel ribbons, twisted and woven, and is attached by a patented form of hook fastener to light iron ceiling bars made in short lengths to allow for expansion. The twisted form of the lathing is a distinct advantage, since it allows for any amount of expansion without cracking and throwing off the plaster. Thus by separating the floor from the ceiling a soundproof in addition to fireproof construction is obtained, while the thickness of the concrete can be determined by the required strength without any regard to the depth of the joist. The enclosing of girders and stanchions in helical lathing and fireproof plaster in a similar way, should prevent that expansion of the iron by heating that has led to so much disparagement

of modern fireproof buildings. Experiment has shown that a fierce fire can play upon a ceiling formed under this system for three-quarters of an hour without melting a block of ice placed on the floor above or cracking the plaster in any way. The floor which we illustrate has the joists spaced from 3 ft. to 4 ft. apart, and over them are steel hanging-straps to support the ceiling-bars which are attached to the straps by bolts. On the upper side of the ceiling bars are placed wood runners bevelled on one side. These carry the boards to form the centring for the concrete. When the concrete has set, one bolt in the ceiling bar is removed; the bar falls, freeing the runners and wood centring, which can then be taken down for re-use.

Slag Wool.

AMONG the means adopted by many architects in view of the importance of arresting the progress of a fire, mention must be made of the properties of slag wool or silicate cotton. This material is non-combustible, and is now being widely adopted for filling in the spaces between timbers and so preventing flames rushing along hidden passages and destroying other parts of a building. Then, too, in connection with wire lathing, it is proving an efficient impediment to the progress of flame and so preventing that violent destruction of buildings that was so characteristic of the recent Cripplegate fire. Had slag wool been plentifully used among the boards, counters, shelves and fittings, Commander Wells would not have had to give instances of large warehouses being totally destroyed within twenty minutes. And yet within a few minutes' walk of the scene of the fire—in Bunhill Row—the use of slag wool for this purpose has been advocated upon a very substantial basis of proof by Messrs. McNeill & Co., whose system of silicate cotton slabs or slag wool sandwiched between wire netting we recently described and illustrated in these columns.

ARCHITECTS, SURVEYORS AND AUCTIONEERS' DIARY AND ALMANAC. — Messrs. Waterlow Brothers & Layton, Limited, forward a copy of this diary for 1898. The diary provides for four days on a page, and the almanack portion of the work is exceedingly well done, a special feature being the lists of members of various professional societies, papers on knotty legal questions, a digest of the principal acts relating to buildings, &c., useful forms and agreements for sales, practical tables for estimating and making valuations, &c. Altogether the Diary provides an inexpensive volume for the office table—neatly and strongly bound.

JOINERY AND MOULDING.—At Shardlow, near Derby, Mr. W. R. Ellis is carrying on a good business as a manufacturer of joinery and moulding, and his new catalogue has many points of interest. It enumerates door frames, casings, French casements, doors, and frames, York lights, &c., while architects' special designs for bay windows, front doors, staircases, &c., can be executed with satisfaction and promptness.

AN ARCHITECT'S SUGGESTIONS.

ADDRESSING the Society of Architects on the lessons of the late London fire, Mr. Ellis Marsland, the hon. sec., recently made four suggestions which are worthy of record and contain some useful hints, the adoption of which may be well commended. We reproduce them below:—

"1. That all buildings of this class should be constructed of brick, without iron or stone lintels, and that the openings have brick arches. Under brick he would include all clay products. If a 'bressummer' were necessary over the ground story, let it be of some hard wood, with the lower edges rounded. A box girder might be permissible if protected with fire-resisting material, and so fixed as to allow of expansion."

"2. That all warehouse floors be of concrete, and any iron girders, joists, or columns carrying the same be protected with metal lathing coated with fire-resisting cement, and the hollow space between run in with fine dry sand, and that the floor boards be laid directly on the concrete."

"3. That all roofs be flat, and of concrete covered with cement or asphalt, with a parapet 2 ft. 6 in. high all around, and that all staircases and lifts be enclosed with a brick wall, and any openings closed with teak or oak doors. The staircase should be of teak or oak, and carried up to the flat roof; this would be a safe exit in case of fire, and enable the Fire Brigade, without so much risk to life and limb and loss of valuable time, to cope with an outbreak, and utilise the flat roofs as 'quoins of vantage' to localise the fire."

"4. That all windows looking into streets or light courts have an asbestos cloth roller blind, or some other non-conducting flexible material, fixed on the outside, running in a groove of iron fixed in the reveals and manipulated from the inside, and which could be readily drawn over the glass window in case of a fire opposite. It would also be desirable that these blinds should be drawn at the close of business each day so that it could be ascertained they were always in working order. This would protect the glass from a great deal of heat, and thus prevent the fire from spreading across streets and light courts in several directions at the same time, as is so often the case now through the breaking of the glass."

To these might be added the adoption of the "Salamander" decorations of the United Asbestos Company, Limited, which are absolutely unflammable and which would certainly retard the progress of fire to a degree now unknown. These are now prepared in such a way that they provide a really decorative material which is capable of the most varied treatment. In our next issue we propose to illustrate some of the charming ceilings which are possible in this material, the unflammable nature of which warrants the reference now made.

COPPER ROOFING.

THE "battle of the roofs"—or rather the conflicts waged between various materials for the purpose—has broken out again, in consequence of recent serious fires, and attention is being forced to the weakness of many modern systems. It is apparent that where streets are narrow or houses adjoin each other, the sparks emitted from the roofs, on the occasion of fire, are powerful agents in igniting other premises. Therefore, any plan by which roofs could remain intact during a conflagration is worthy of consideration, especially when it has features of utility for ordinary situations and in less trying circumstances.

As compared with lead, a copper roof may be laid at about one-fifth the weight, so that

a building requiring four or five tons of lead in its roof would only want one ton of copper. Zinc is considerably lighter than lead, in fact only slightly heavier than copper, but its lessened cost may be regarded as an indication of its inability to withstand wind and storm for so long a period as copper. Of course, in mentioning these facts, we only deal with the raw material; the methods of covering and the mode of manufacture may each influence the permanence and value of lead or zinc for roofs.

One system of laying sheet-copper on roofs was recently explained to us by Messrs. Ewart & Son. Their plan is to lay the sheets between wood rolls, somewhat similar to those ordinarily employed in laying sheet-zinc, but with this difference—that the caps over the rolls are welded to the sheets on both sides. This welded cap secures a firm and absolutely sound connection being made, while sufficient allowance is made for the expansion and contraction for the metal. It should be remarked that this alteration is very little when compared with some other materials, a fact which enhances its value, for should fire occur in a building covered with copper there is no danger of molten lead pouring down, or of that excessive expansion and twisting which so often increases the danger of fire in modern buildings. The stop-end is also welded to the sheet and the saddle-plate is turned up out of the roll cap and welded to the sheet above it. 16 oz., 18 oz. or 20 oz. is the weight usually allowed to the square foot of copper sheeting, such making a really permanent roofing. Messrs. Ewart & Son also make a patent copper tile, and their work in connection with spires, domes, turrets, &c., both in London and the provinces, has given great satisfaction to architects.

ART METAL EXHIBITION.

THE Art Metal Exhibition, which is to be held at the Aquarium, Westminster, in May and June, promises well, judging from the reception accorded to the idea up to the present. Prof. Banister Fletcher, F.R.I.B.A., is chairman of the Council, upon which are Messrs. Maurice B. Adams, F.R.I.B.A., Lewis F. Day, J. Starkie Gardner (who contributed a notable article on "Modern Ironwork" to the first volume of ARCHITECTURE), Seymour Lucas, A.R.A., Ellis Marsland (hon. sec. of the Society of Architects), A. W. Smith, F.R.I.B.A., and others of repute.

During the first two weeks of June there will be handicraft competitions, and Mr. Edgar S. Shrubsole, the secretary, will be pleased to send intending competitors a list of subjects for which medals and awards will be given. Special prizes will also be offered for designs, among the subjects selected for which these are invited, being a street lamp-post, a wrought-iron open panel, a weather-cock, pair of carriage gates, a grille to fill a semicircular arch 10 ft. wide, and a lectern. Guided along the lines which have been indicated in the initial prospectus, the Exhibition should not only be well worth seeing, but it should afford a good opportunity for firms engaged in art metal work to display their capabilities.

THE GALLERY OF BRITISH ART, at Millbank (illustrated in ARCHITECTURE, vol. ii., p. 425) is to be completed without delay, according to the original design of the architect, Mr. R. J. Sidney Smith.

BURTON-ON-TRENT.—Fifteen tenders for the supply of the fireclay goods required by the Corporation of Burton-on-Trent were received, ranging from £265 to £584. The former was accepted, the firm tendering being Messrs. Mobberley & Bayley, Limited, Stourbridge.

THE ARCHITECT'S DIARY, published by Messrs. Hudson & Kearns, of 83, Southwark Street, S.E., is so well-known in professional circles that there remains little to be said in its praise that is not already known and acknowledged. Those for 1898 are in the familiar brown binding, ruled and printed to a particular form specially adapted for architects' use, and comprise diary, notebook, rent and insurance register, cash-book, ledger, &c. Then follows the cases of interest decided in the Law Courts during the past year, and a multiplicity of information concerning statutes, bye-laws, and various associations, with everything one might expect to find in a work of reference. The diary is in two sizes and can be had with lock and key if desired. Convenience of arrangement and accuracy of data are as characteristic of Messrs. Hudson & Kearns' diaries as are their excellent paper and print.

THE SOCIETY OF ARCHITECTS.—In his presidential address to this Society, Mr. Walter Emden, J.P., L.C.C., insisted upon the necessity for the registration of architects, for, he said, "unless absolute compulsion is enforced under an Act for Registration, nothing will accomplish the exclusion of the incompetent." He referred to the difficulties caused by the overlapping of the powers of the various authorities and instanced London, where the central authority deals with frontage lines, projections, construction, and such like matters, and puts in action its own surveyors, while in each district the surveyor to the local body practically deals with the same subjects.

CONCRETE EMERY-FACED STEPS.—The emery-faced steps introduced by Messrs. Addison, Potter & Son, have been trampled on for years without any perceptible result, and without becoming slippery on the surface.

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Export Business.

THE Board of Trade Returns issued during December shew even further improvement in the cement trade, increased quantities having gone to the Argentine Republic, the East Indies and Australasia. Looking at the returns for the eleven months ending November 30th, we find the value of the exports in the years 1895 and 1897 to be £596,186 and £601,167 respectively, whereas the quantities were 367,233 tons and 364,711 tons respectively—indicating an advance in value, despite the fierce competition abroad.

Portland Cement.

To the Liverpool Engineering Society two interesting papers have lately been read on Portland Cement and on experiments in the acceleration of its setting, by Messrs. Prosser A. H. Shaw and Frank E. Priest respectively. Both gentlemen are members of the Institute of Civil Engineers. The former said he had used Portland cement for twenty years on large and critical structures without experiencing a failure. We were glad to notice that Mr. Shaw incidentally commented on the extreme fineness of the cement made by German manufacturers, as this fact has led to its adoption in one of our important colonies, much to the disadvantage of the British product. Recognising that fineness is of the utmost and primary importance, and a chief factor in the ultimate strength of the concrete, Mr. Shaw points out that some of the German manufacturers "reach their grinding to 10 per cent. on a sieve of 32,000 holes to the square inch. This," he considers, "is going to the extreme, and bordering on absurdity, as the means of testing such fineness is so difficult and uncertain." The author himself specifies that "not more than 10 per cent. residue by weight should be left on a 5,800 mesh sieve, and considers it would be a great matter if such was adopted as a uniform grinding."

After describing to a meeting of the same Society a series of experiments in the acceleration of the setting of Portland cement, Mr. Priest said it was evident that the strength of the cement is reduced by the addition of soda. This was apparent at the end of seven days; "at later periods the strength increases at about the same rate in the pure cement as in that to which soda is added. This seems to point to the reduction of strength when soda is added being due to interruption of crystallisation in the very early stages, so that if the cement could be mixed and placed *in situ* in less time than the beginning of setting requires, it is probable the strength would be greater. The strength attained by the cement and soda, so far as the experiments have gone, is sufficient for practical purposes, and as no evidence of future destruction is present, there is no reason against the use of soda for accelerating the setting of cement where that condition is desirable."

A Cambridge Company.

THE Meldreth Portland Cement and Brick Company has been formed to manufacture Portland and other cement, bricks, tiles, &c., at Meldreth, Cambridge. Beneath the coprolites under the cement earth is a deposit of blue gault clay from which a high class quality of bricks, tiles, drain pipes, &c., can be made. The Board of Directors includes

some practical men, among whom are Messrs. Joseph Bell, J.P., of Messrs. W. Bell & Sons, builders and contractors, Saffron Walden and Cambridge; John Neville, J.P., chairman of the Ravenhead Pipe and Brick Company, Limited, St. Helen's; and J. H. Sankey, J.P., of Messrs. Sankey & Son, the well-known cement, lime and brick merchants, of Canning Town and Woolwich.

Testing Portland Cement.

THE test of cement is not wholly in the particular brand, but rather, as has been said, in the fineness to which it is ground. When finely ground it will spread itself over and round the ballast better than a coarsely ground cement, while it is only the fine portion of the cement (known to the trade as "flour") that has cementitious property. Recognising this, the Dartford Portland Cement Co. have laid down special machinery at their works at Dartford to produce Portland cement which will pass not less than 95 to 97 per cent. through a sieve having 5,776 meshes to the square inch—a degree of fineness which speaks excellently for the quality, when judged by the standard of Mr. Shaw.

The Slate Trade.

THE National Association of Slate Merchants, which has now 230 members, has had a conference with the Festiniog Quarry Proprietors' Association, and we understand a mutual understanding on rather difficult questions has been arrived at. As this, however, has yet to be confirmed by the executive committee, we refrain from publishing the details just now, but the contentions of the slate merchants have been very favourably considered.

At the close of the year the quarries have issued their new price lists, with slight advances, but no exciting developments. Readjustments of certain figures have been made at Penrhyn and Dinorwic, and the Carnarvon discount of 2½ per cent. has been withdrawn. No alteration has been made in Portmadoc prices, although in no case is there any guarantee for the future.



A Partition Brick.

IN place of the old lath and plaster partitions, the "Shepwood" patent partition brick seems admirably adapted. The bricks have hollow spaces passing vertically through them, so that when placed over each other with bonded joints the spaces are continuous. There are also continuous frogs on both beds. These spaces and continuous frogs are grouted with concrete as the bricks are built in position, thus forming a complete web or network of concrete in which the bricks are securely held. The brick has a thickness of 2½ inches, and will be found particularly valuable where space is limited.

Facing Bricks.

ALTHOUGH the county of Hampshire is usually associated with a fine breed of sheep, such is not its only claim to distinction. Among other possessions of value are several clays particularly suitable for bricks of a high character as regards colour, strength and good weathering properties. At Rowlands Castle, for instance, there is a fine bed of terra cotta clay which has the qualities of being plastic and burning a rich red

colour without the admixture of colouring matter, thanks to the proportion of oxide of iron with which Nature has favoured it. This is being worked by Mr. E. P. Bastin, who has put down a plant of improved machinery at the Rowlands Castle Brick, Tile, and Terra Cotta Works, where the clays are ground and mixed in a most thorough manner. After being moulded, the bricks are burnt in specially constructed kilns, and Mr. Bastin is able thus to produce facing bricks of a dark or rich red colour, and of great strength. Kirkaldy's test has shewn them to withstand a pressure of 300 tons per square foot before crushing.

Pilkington's Tiles.

THE visitor to the National Gallery may see to the rear of that building an exemplification of the artistic in industry—such as would have delighted the late William Morris. At 145, Whitcomb Street, W.C., is the showroom of the Pilkington's Tile and Pottery Company, Limited, which, in less than four years, has attained a worthy position in the Metropolis. Ranged round the walls are tiles of every kind, from the plain square in one colour, to the most intricate dado arrangements. Here may be seen out a new cheap and durable flooring tile, known as Quartzite, as well as the Sunstone tile, towards the perfecting of which several experiments have lately been made with gratifying success. By the mixture of small quantities of silver and gold, a glitter is obtained in the sunlight, thus adding materially to the effect.

ARTISTIC IRONFOUNDING.

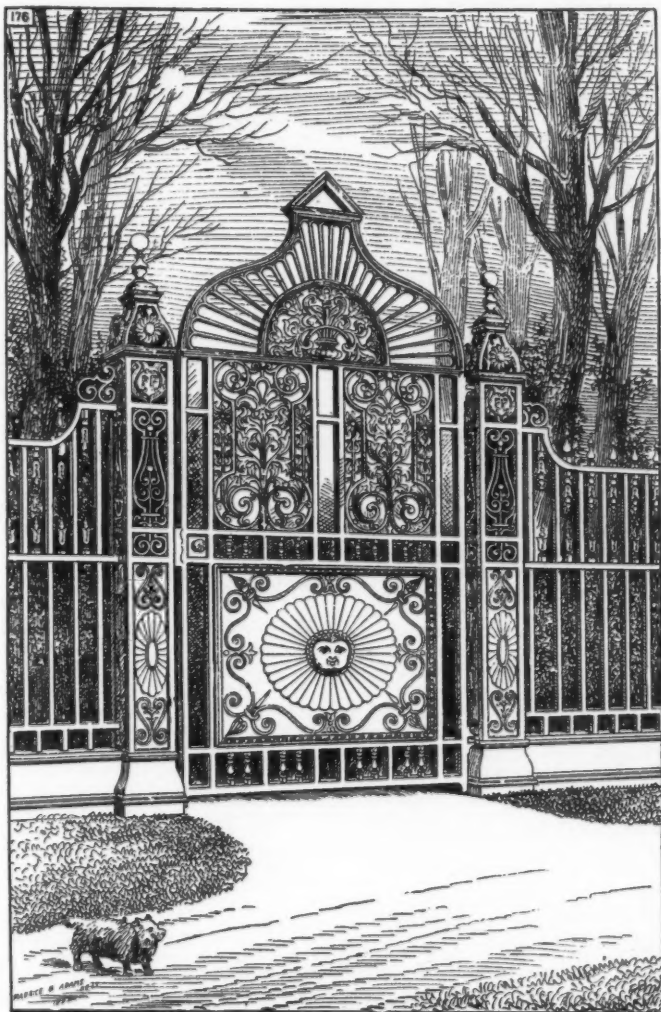
A PRETTY village, which has been prettier—this is Coalbrookdale: a large foundry, which has been smaller—this is the Coalbrookdale Ironworks. Commenced in the year 1709, it is the oldest foundry in the kingdom and probably fifty years older than the Carron works in Scotland, frequently described as the oldest. To its age, and to the fact that the family of Darby, who originated the works, have up to the present maintained an active connection with it, must be ascribed in great measure the continuity of high-class productions which have emanated from Coalbrookdale. The historic interest in an iron-foundry which saw the early beginnings of a mighty industry would be sufficient to take the interested traveller, who had got as far as Wellington, a few miles further. He would be rewarded by seeing a wonderfully well-ordered and completely equipped foundry, and his powers of belief would be tested by the sight of articles turned out from the moulding shop which, even with an extensive experience of the business, he probably had hitherto thought would not be even attempted. Castings, with surfaces as smooth and even as paper, of surprising variety and to a thinness which is more than amazing; these he would see, and he would wonder whether it was the experience of years, the knowledge of some wonderful sand, or a supernatural process of casting which produced the results. He would not be informed on this point. He would be left to draw his own conclusions, and these might or might not be aided by the knowledge that amongst the moulders were men who came of a race of moulders, whose fathers, grandfathers and great-grandfathers had worked at Coalbrookdale. It is an interesting spot, and unique in its way, for nearly the whole place is owned by those who form the Coalbrookdale Co., Ltd.; the very school is their property, and the literary and scientific institute, which stands in a commanding position and may also have something to do with the type of work which the great works turns out, is also of their creation. The Darbys were originally members of the community of Quakers, and when one re-

members how intimately that body has been associated with social as well as material progress, conclusions may also be drawn from that circumstance. However, in whatever way it has gained its success, this company, the chairman of which is still a Darby, has attained an enviable position, and throughout its long career the foundry has always been noted for the high and almost unvarying quality of its work.

The moulding shops are large, well-lit and excellently ordered. The plant is modern, and what strikes the visitor is the unexpected cleanliness of the whole place and the small amount of "dressing" which is needed, and consequent absence of noise. You pass from shop to shop, you see moulders and dressers and fitters to the number of 1,200, you

delicately pretty for use, and yet are as strong as their more massive brethren. Designs by Stevens of rare beauty, of the classic Adams, and by other well-known and valued men. Very recent designs, which tend to a greater severity, are also to be seen. Lamps, flambeaux, gates of strikingly handsome designs, newel posts by Adams, and statues by John Bell, to say nothing of the smaller ornamental castings, all these claim the attention on account of their individual merit. What is more remarkable is the fact that, with all this artistic quality, strength of material and fineness of finish, the prices charged are quite on a line with those of other firms.

Amongst the work done by the Coalbrookdale Company, Limited, may be mentioned the



PARK GATE—BY THE COALBROOKDALE COMPANY, LTD.

dimly realise the variety of work which is in progress; but what chiefly engrosses your attention and compels your admiration are the finished products. These you see at Coalbrookdale, and they comprise very many articles; but it is at the Victoria Embankment where they are seen to best advantage. There you can see a stock of architectural ironwork which should satisfy the most exacting of architects. A magnificent piece of work is the grate exhibited in 1851. How the casting of so much undercut work could be accomplished with such absolute smoothness and such perfection of definiteness in line and curve is a mystery to the uninitiated. It must be seen to be believed. Chippendale grates are there, of patterns which look too

great gates put up in 1851 at Hyde Park and Kensington Gardens; those of Warrington Public Park, long exhibited at the Crystal Palace; the lamps at Charing Cross and Northumberland Avenue; those at the City of London School; the porches of the Hotel Metropole, Hotel Victoria, &c.; the grates of the Hotel Cecil and the late Mr. Barnato's house (now Sir A. Sassoon's) in Park Lane, &c.; the Colston statue at Bristol and that of Cromwell at the Crystal Palace. But the record of the work done is too enormous even to suggest. Sufficient has been said to shew that this is a firm of the first importance, which is doing much to raise the artistic position of this country in the department of cast ironwork.

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BUILDERS AND BUILDINGS.

Benevolent Institution.—At the fiftieth annual dinner of the Builders' Benevolent Institution, Mr. Charles Wall presided over a numerous company, which included Messrs. T. F. Rider, H. Holloway, J. H. Colls, J. T. Bolding, Nightingale, and J. C. Preston, the senior warden of the Carpenters' Company, in whose hall the dinner was held. In proposing "The Architects and Surveyors," Mr. Colls gave it as his opinion that the two bodies should be as distinct as possible, and Mr. W. B. Church, in replying for the architects, pointed out that the architect's position was not altogether a bed of roses, for, with so many new materials and new ideas, he had to be a sort of walking encyclopaedia. Major Brutton announced that the total donations amounted to £741, the President's list shewing a total of £599, including his own donation of 100 guineas.

Birmingham.—County Alderman J. Bowen has been elected President of the Birmingham Master Builders' Association, and Mr. E. J. Bigwood secretary. At the annual dinner Mr. C. E. Bateman responded on behalf of the architects and surveyors.

Dewsbury.—Mr. W. R. Thompson, of Dewsbury, was elected to the presidency of the National Association of Slate Merchants in the autumn, and has now been invited to a similar position in the Spen Valley and District Contractors and Builders' Association.

Leicester.—There was a note of prosperity at the annual dinner of the Leicester Master Builders' Association, for the Surveyor told those present that during the twelve months ended September last plans had been passed for 2,062 houses—an increase of 490 when compared with the previous twelve months. Mr. G. Hardington, in responding to the toast of the evening, referred to the state of the brick trade, prices having gone up from 10 to 20 per cent.

Nottingham.—Permanent offices at Bentinck Buildings, Wheeler Gate, Nottingham, have been taken by the Nottingham Master Builders' Association, where a collection of catalogues and price lists will be kept for reference.

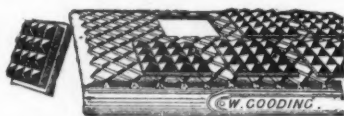
Rowton Houses.—Lord Rowton is erecting several lodging-houses for men in London, the third being now open at Newington Butts, having a frontage of 214 ft., a depth of 138 ft., and a superficial area of 27,850 ft. Mr. Harry B. Measures was the architect, and the elevations are in pressed Leicester facing

bricks relieved with mingled gaults of pinky buff terra cotta, supplied by Mr. J. C. Edwards, of Ruabon. The whole of the interior walling, except where glazed bricks are used, is built with gault bricks, and the floors are fireproof throughout, being formed of concrete and steel.

Bolton.—At the Annual Dinner of the Bolton Master Builders' Association, Mr. J. H. Marsden, the President, presided, and regretted that the master painters had left the association, to form a branch of the National Master Painters' Association. Warm praise was bestowed on the secretary, Mr. F. W. Briscoe.

Stair Treads.

In our November Supplement we described the main features of the various stair treads upon which modern men stamp their feet with impunity. Herewith is an illustration of the "Patent Interchangeable Rubber Stair Tread," which has been adopted in many



busy positions and has won a large share of public favour and architects' approval.

As will be seen, the tread consists of an iron keeper pierced with a number of square-shaped holes through which blocks of rubber are placed. These latter form the wearing surface and give a firm footing under all circumstances. It is claimed by Mr. W. Gooding, the inventor and manufacturer of this system, that these treads are distinguished for durability, and he points to their use on the well-known London excursion steamer "La Marguerite," as evidence of their serviceability, for the captain has placed on record his opinion that "for security of foothold, simplicity of arrangement, cleanliness in application, combined with efficiency and economy, there is nothing that I know of to equal them."

These rubber treads are easily adapted to existing stairs, while their interchangeability admits of their renewal without any difficulty, or of the worn ones in the centre being removed to the sides or vice versa, thus effecting a wise and proper economy. Not only have architects appreciated these treads but they have been awarded ten gold medals and various other distinctions; while the fact that they are also made in iron, galvanized iron, brass, gun metal, etc., shews the adaptability of the principle and should lead, at least, to a consideration of their claims by all having any concern in the diminution of accidents arising from slippery stairs.

BUSINESS CHANGES.

Limited Liability Company.

No change takes place in the management of Messrs. GEORGE FARMILOR & SONS, of 34, St. John Street, West Smithfield, E.C., in consequence of the addition of "Limited" to the style of the firm.

Partnership Changes.

The partnership between Mr. J. T. WIMPERIS and Mr. W. H. ARBER, architects, 25, Sackville Street, Piccadilly, has been dissolved. We understand the practice will be continued by the latter gentleman under the same style—J. T. WIMPERIS & ARBER—as heretofore, at the same address.

Mr. H. K. G. Bamber has been admitted a partner in the firm of Messrs. KNIGHT, BEVAN & STURGE, Portland cement manufacturers, Northfleet.

The business of Messrs. CRABTREE & THORNTON, joiners and builders, Great Horton, Bradford, will be continued under the same name by Mr. Smith Thornton.

Messrs. CHARLES DEACON & SON, timber merchants, High Street, Stratford, E., have dissolved partnership.

Appointments.

Mr. J. R. VEALL, architect, 84, Darlington Street, Wolverhampton, has been re-elected by the Bishop of Lichfield and Archdeaconry of Stafford as diocesan surveyor for the district.

Mr. ERNEST BENEDICT, M.Inst.C.E., has accepted the editorship of "Daily Tenders and Contracts."

Removals.

Mr. W. HENRY WHITE, A.R.I.B.A., has removed from 2, Vere Street, to 14A, Cavendish Place, London, W., corner of Cavendish Square.

Mr. WM. HART, architect, has removed from York Buildings, Duke Street, Adelphi, to Donington House, Norfolk Street, Strand, W.C.

MESSRS. EDGAR KEELING, TEALE & Co. have removed from Gray's Inn Road, W.C., to the "Ravenscourt Art Metal Works," Ravenscourt Square, W.

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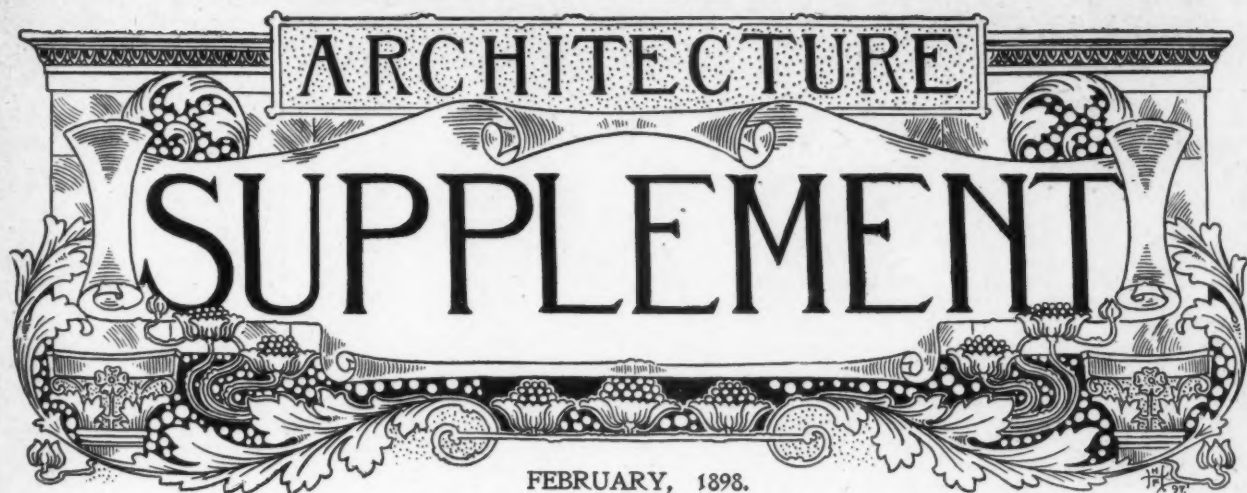
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Architecture Supplement.

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Publishing Offices: Talbot House, Arundel St., W.C.

"Architecture" Calendar.

FEBRUARY.

- 4.—A. A. Mr. John Belcher, F.R.I.B.A., on "Hampton Court Palace." Birmingham A. A. Mr. L. A. Shuffrey on "House Decoration."
- 7.—R.I.B.A. Mr. E. O. Sachs on "The Housing of the Drama." Liverpool Architectural Society. Mr. W. H. Bidlake, M.A., A.R.I.B.A., on "The Quality of Strength in Architecture."
- 8.—Sheffield Society of Architects and Surveyors. Mr. Hugh Stannus, F.R.I.B.A., on "Proportion," with illustrations.
- 16.—Northern A. A. Mr. Ralph Hedley on "Architectural Modelling." Liverpool Engineering Society. Dr. J. H. T. Tudsbery, M.I.C.E., on "Engineering Survey Work."
- 18.—Birmingham A. A. Mr. F. W. Bedford on "Siena and Baldassare Peruzzi."
- 21.—R.I.B.A. Mr. J. Tavenor Perry on "The Mediæval Campanile at Rome." Liverpool Architectural Society. Mr. F. E. Pearce Edwards, A.R.I.B.A., on "Some Notes on St. George's Hall." Sanitary Institute. Lecture by Dr. Louis Parkes on "Blots in our Sanitary Administration."
- 25.—A. A. Mr. F. W. Troup, A.R.I.B.A., on "Plain and Decorative Lead Work." Auctioneers' Institute. Mr. W. Roland Peck, F.S.I., on "Furniture, Past and Present."

ARCHITECTS v. CORPORATIONS.

Trouble at Southend-on-Sea.

IT is not given to all men to stand the excitement which comes with a boom of extreme prosperity, neither is it given to Corporate bodies to be wiser in their generation than individuals. The Corporation of Southend-on-Sea have an idea of erecting Municipal Offices, Technical Schools, Baths, and all the other paraphernalia—which is usually the ambition of an Urban district suffering from a swelled head—at an eventual cost of somewhere between £50,000 and £60,000. There appears to be no prospect whatever of the scheme coming to maturity for some years, but like all excitable people, or excitable bodies, the Corporation have determined to take the first initial step, and to have plans prepared in competition for the suggested works.

The wise men of the Council are, as usual, in a minority; the consequence is that some fearful architectural muddles have lately been perpetrated at this enterprising watering-place. With the praiseworthy intention of for once carrying through a public work to the satisfaction of all parties, the Corporation have invited Architects to join in a limited competition. This has been accomplished by calling in Mr. J. M. Brydon, perhaps one of the most able men in practice, and they have limited the competition to five selected London Architects (evidently under the advice of their assessor), and to the local practitioners, who must be both householders and ratepayers in the borough, though why on earth the qualification for competing is that of being a householder and ratepayer is past our comprehension.

So far so good. Now comes the trouble. Instead of offering premiums, of say £150 and £100, the worthy Corporation have undertaken to give a fee of fifty guineas to each of the five selected London men, and nothing to the local practitioners. Naturally enough the local practitioners object to this very open-handed insult, and they have addressed a communication on the subject, to the Corporation, and the Corporation have replied that, as it is impossible to alter the conditions of the competition, they will ask their assessor to discover any particular merit in any of the plans submitted by the local men, and, if he can discover any such merit, the General Purposes Committee will be recommended to award the sum of £50 to the author of such merited drawings. Insult No. 1 is capped by the sublime insolence of No. 2. We hear that the local Architects have very properly declined to enter the competition,

and have, therefore, not accepted the invitation of the Corporation.

As far as the architectural amenities of Southend-on-Sea are concerned, the Corporation and the public may not have very much cause to regret this action on the part of the local practitioners. But that is not the point. The same result could have been accomplished without ruffling the susceptibilities of the local Architects; whereas much heartburning and intense opposition to the scheme has been engendered by this tactless method of conducting public affairs.

In this breach of professional etiquette we are wholly on the side of the local men, who have by their action luckily saved themselves from an immense waste of time and labour in competing for a building, which is now in the competitive hands of five Architects, any one of whom is quite competent to put up a public building of this character with credit to himself and the profession to which he belongs.

There have lately been constructed in Southend-on-Sea some of the most atrocious buildings possible for the mind of human creatures to conceive, buildings utterly devoid of scale and dignity, and possessing even no trace of the rudiments of architectural art. Whether these buildings are the work of local men, or otherwise, we do not pretend to say, or even to know, but perhaps it is generous to the Corporation if we think that this fact must have been in their minds when they offered this very wanton and tactless insult to the ratepaying Architects of their borough.

Church Building.

THE Incorporated Society for Promoting the Enlargement, Building and Repairing of Churches and Chapels, at its last monthly meeting, made grants towards enlarging and improving several churches, notably Caincross St. Matthew, near Stroud, Gloucestershire, and Shap St. Michael, Westmoreland. Grants were also made for works completed at Coveney St. Peter, near Ely, and Grafton Underwood St. James, near Kettering. We understand that some of the parishioners of Charlcombe, near Bath, are anxious to see their parish church enlarged, but the proposal has met with a rebuff. Mr. James Chaffin, of The Grange, Charlcombe, has sent to the local press a letter from a friend, who speaks with knowledge and authority, in which he urges the most strenuous opposition, as it "would destroy the historic traditions that lend such a unique interest to this church which, after more than seven hundred years direct connection with Bath Abbey, retains a small portion of its Norman wall and much of its original form and pristine simplicity of character."

TERRA COTTA WORK.

From Architects' Designs.

OF late years there has been evidenced a growing disposition on the part of architects all over the kingdom to utilise terra cotta, not merely for occasional decoration, but for complete buildings. Nowhere is this more marked than in the Midlands. Birmingham's new Law Courts, technical schools, churches, numerous banks, and many great commercial buildings testify to the popularity of terra cotta, whilst in the surrounding towns of Walsall, Wolverhampton, West Bromwich, Sutton, &c., the prevailing colour of the buildings indicates the presence of the baked clay.

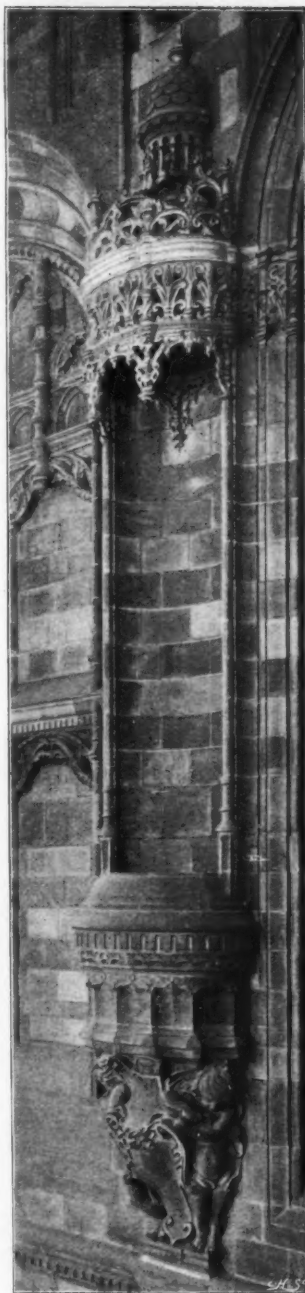
The excellent example set by such noted architects as Mr. Waterhouse in the Natural History Museum, South Kensington, and Mr. Aston Webb in the Birmingham Law Courts has had its influence, and the rush for terra cotta goes on increasingly.

One of the difficulties which the architect had to contend with at the outset, was the small number of firms properly equipped for turning out work with sufficient rapidity and true to measurements. Many firms now lay themselves out for the work. One of the oldest and most noted is Messrs. Gibbs & Canning, of Tamworth, who will always be remembered as the firm who did such magnificent work in connection with the South Kensington Museum.

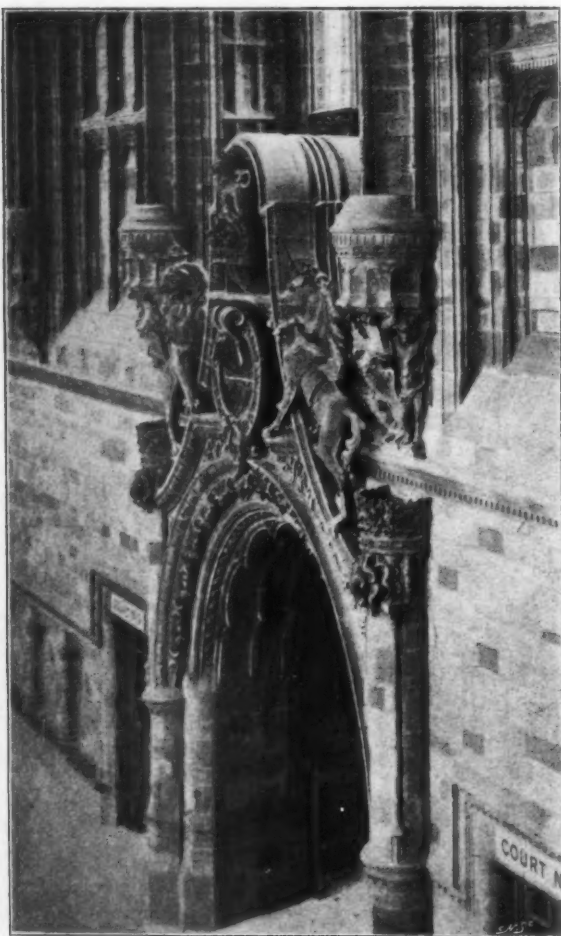
Messrs. Gibbs & Canning have been engaged in terra cotta work at Tamworth for very many years. Their premises cover many acres of ground, and they have had a

very wide experience of architectural work, which considerably lightens the cares of the architect.

Taking a stroll over their premises, at the outset you come face to face with some splendidly modelled animals, replicas of those at Kensington, in buff terra cotta. Then you are directed past the kilns. Special kilns are required for terra cotta work and are known as muffle kilns, with six or seven furnaces to each. The firing takes anxious attention, and when very delicate and troublesome work is in hand, Messrs. Gibbs and Canning's manager's life is not a happy one. The process of firing and cooling will often extend over two weeks, and should an accident occur, the delay occasioned is apt to work upon the builders' nerves and language. But at Tamworth their wide experience saves them from this. They have attained the art to



TERRA COTTA WORK.



TERRA COTTA WORK IN THE BIRMINGHAM ASSIZE COURTS.

actual clay or undercutting moulded productions. Mould making is a department of great interest. There plaster of Paris has a monopoly, and for such portions of the building which are repeated in quantity moulds are made from plaster and the clay pressed into these moulds.

What most strikes the visitor to Tamworth is the high intelligence of the workmen, the completeness of every department, and the smoothness with which the work goes on under able management, which is thoroughly alive to every progressive development in this growing and important industry.

Amongst the most notable work done by the firm, the interior of the Victoria Assize Courts, Birmingham, and the internal and external face of the Natural History Museum, Kensington, have been mentioned, and we give two illustrations shewing parts of the interior of the Assize Courts. The list of work is long, but other buildings which may be mentioned are—the Theological College and Municipal Technical Schools, Birmingham; All Souls Church, Eastbourne; St. Luke's Church, Bromley; "Tattendon" mansion (for Mr. Alfred Waterhouse, R.A.).

Sanitary pipes also are made at the Glascote Works, and chimney pots. These have a high reputation. White glazed bricks form an important part of the business, and are noted for their fine glaze and enduring colour. The cane-coloured glazed sinks which are turned out here are celebrated, and Messrs. Gibbs & Canning have a steady and growing trade in this department.

Reference should be made to large supplies of clay which exist on the spot, and to the fact that the quarries owned by the firm enable them to be practically independent of the outside market.

perfection of getting shrinkage and colour to a nicety.

From the kilns you pass into the building and through the various shops. You are shewn the clay being prepared by grinding and mixing, and you finally see it passed out for use by the modellers and moulders. You pass through large well-lit rooms where designers and draughtsmen are at work. You are shewn gentlemen in smocks hard at work either upon the

ESSEX BRASSES.—The January number of the *Essex Review* has an interesting article on "Some Essex Brasses," by the authors of "the Monumental Brasses of Essex," as well as an excellent record of recent church restorations in the county. We notice that St. Nicholas Chapel, Little Coggeshall, has been restored after having been in a state of decay for many years. Messrs. Rattee & Kett did the work, under the supervision of Mr. M. Bodley, architect. The *Essex Review* is very ably edited by Mr. E. A. Fitch and Miss C. Fell Smith, and presents an illustrated quarterly record of everything of permanent interest in the county.

THE PRINCESS LOUISE and the Marquis of Lorne recently visited the works of the Della Robbia Pottery Company at Birkenhead. The various processes of manufacture were explained to them by Mr. H. S. Rathbone, the managing director.



A WEST END SHOWROOM.

John Line & Sons.

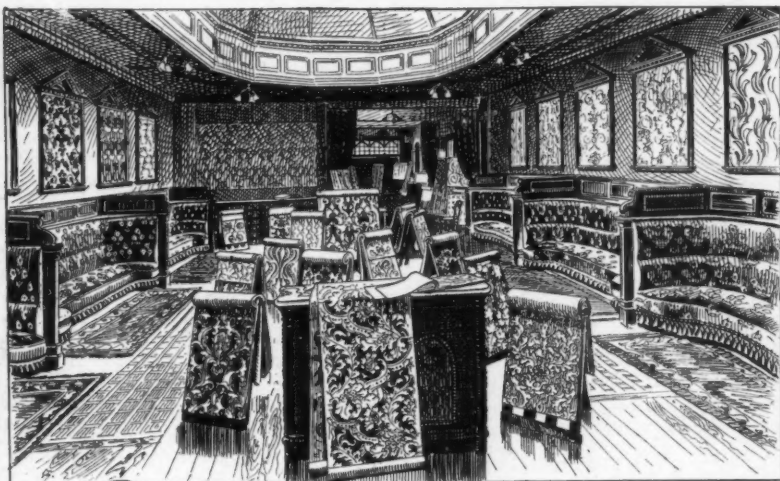
AMONG the most elegant of new showrooms recently opened in the West End of London is that of Messrs. John Line & Sons, at 50, Berners Street, W., where every facility is provided for the inspection of as fine a show of wall and ceiling papers as need be desired. Centrally situated, the showrooms are easily accessible from any part of the metropolis, and being under the management of F. G. Froggatt—who has had long experience as a designer and as a specialist in high-class house decoration—the pleasures of a visit are considerably enhanced. The main showroom, which is on the ground floor, has an area of 185 square yards, and a handsome dome nearly 30 feet high, which gives a splendid light, supplemented, when necessary, by the electric light. The furnishing has been executed with magnificent effect, and the scheme of decoration gives a very effective background for the display of the papers. In connection with the showroom a darkened room is provided, where artificial light is arranged, in order to give architects and others full opportunity for the observation of varied effects. The appointments, it will be seen, are of the best description—a fact which we commend to the notice of those members of the trade who desire their clients to see

catalogue will be found other designs in paperhangings, relief, wall and ceiling decoration, while the complete character of the business is revealed in the sections devoted to colours, paints, &c.—a separate 26 page book of tints and directions for Duresco fresco paint having been just issued—enamels, varnishes, japans, &c., as well as all the materials required by painters and paper-



THE "SEVILLE IRIS" PATTERN.

hangers. Sufficient has been said to give some idea of the variety and extent of the business of Messrs. Line & Sons, and it remains but to add that for the convenience of City clients they have also a Showroom at 163, Aldersgate Street, which is their City Warehouse, while some country customers will find their branch establishment in Broad Street, Reading, even more easy of access.



JOHN LINE AND SONS' NEW SHOWROOM.

the papers under the most alluring conditions.

A word as to Messrs. Line & Sons' method of business. They supply the trade only, so that firms can introduce customers with every confidence. Here clients may choose, select, and be advised—the orders properly going through the channels of introduction. This is a matter of much concern to the trade, and we congratulate the firm on the loyal way in which they have adhered to such a policy.

Several excellent designs in wall papers have lately been brought out by the firm, chief among which are "The Orleans," the "Seville Iris," and the "Saxmundham," the latter being a six colour machine-printed design in various harmonious colourings, and with talc and satinette effects. In their



Export Business in 1897.

THE favourable reports we were able to publish last year may now be reviewed in the light of the Board of Trade Returns recently issued, which shew that the movement was well maintained during December, when the value of the cement exports reached £46,752, the quantity being 27,044 tons. The figures relating to Canada were most

remarkable, for while in the last month of 1895 and 1896 only 138 and 4 tons respectively were exported to the Dominion, no fewer than 1,501 tons were sent thither in 1897. This sudden increase, however, failed to carry the year's transactions with British North America above those of preceding years. In fact, the exports for 1897, valued at £22,498, were £10,000 below those of 1896.

Looking at the total results, the cement exports of 1897 reached £647,919, as compared with £580,417 in the previous year, and were about £6,000 above the return for 1895, although the quantity was a thousand tons less. The United States took cement to the value of £107,177; the British possessions in South Africa were responsible for £71,601; those in the East Indies, £63,588, and in Australasia to £63,739. The Argentine took £38,332 worth; Brazil, £38,332; Holland, £14,077, and "other countries," £227,103. We really think the authorities should endeavour to classify the latter amount so as to make it easy for our manufacturers to know the prospects and possibilities of trade in foreign countries.

CONCRETE.*

A Useful Book.

MR. THOMAS POTTER is a recognised authority on concrete, and the first edition of his work on the subject was published as long ago as 1877. Since then his further experience and observation have enabled him to improve his earlier works, and the present volume must be regarded as singularly authoritative and well-nigh exhaustive. Concrete has been so often regarded as a simple material that little interest has frequently been taken in its application and the improvement of its properties by a thoughtful consideration of its manufacture and methods of working. The antiquity of concrete has long been acknowledged, while the concrete foundation of such places as Salisbury Cathedral, formed about 860 years since, attest its permanence.

Portland Cement.

Having dealt technically with the constituents of concrete, Mr. Potter proceeds to give an interesting sketch of the early days of Portland cement, invented by Joseph Aspdon, of Leeds, and to make which his son William Aspdon set up a manufactory at Northfleet. Here we have some further references to the question of fineness in cement, to which previous reference has been made in these columns, notably in connection with the German competition in the Colonies. It appears that Mr. Bernays, M.I.C.E., used about 50,000 tons of cement in the Chatham Dockyard extension works in the years 1870-80, and although fineness was not a *sine qua non*, the tensile strain being the crucial test, samples of the cement were passed through a 2,500 mesh sieve, and the residue averaged 25 per cent. Such a loss would be viewed with anything but favour nowadays. Summarising the essential points to be observed in the use of Portland cement on buildings, as a matrix for general concrete purposes, Mr. Potter maintains (1) it should weigh from 112 to 120 pounds per bushel; (2) on a sieve of 2,500 meshes, at the least, to a superficial inch, there should be not more than 10 per cent. residue; (3) it should, when mixed neat and the test blocks having been immersed in water during an interval of seven days, withstand, without breaking, a tensile strain of 350 pounds per superficial inch; (4) it should be kept for not less than 14 days before use. The book records several interesting experiments in association with this branch of the subject, which give it a real value to all practically engaged in building construction.

(To be continued.)

* "Concrete: Its Use in Building." By Thomas Potter. London: B. T. Batsford.

"SALAMANDER" FIREPROOF DECORATIONS.

Too frequently the desire to secure novel and effective schemes of house decoration has overborne the dangers that may arise from a thoughtless expenditure without regard to the qualities of the materials employed. Then such object lessons as that of the recent great fire are useful to demonstrate the necessity of combining security from possible fire with good ideas and artistic instincts in decorative effects. Gradually the public is recognising this need, and with a little advance from the architectural profession, further recognition may be made. In such a matter, too, the assistance of manufacturers and commercial men may be usefully employed, especially when they are prepared to treat their ordinary materials of trade with artistic taste, and to consider the skill of first-class designers. In the United Asbestos "Salamander" decorations these two desiderata have been united, and the result is that it is now possible to have a highly ornate wall with a delightfully decorative character, without any possibility of adding to the danger of fire. In fact, the well-known properties of asbestos render this system of decoration a retarding agency, thus minimising the risks of fire and giving a greater sense of security wherever it is employed. Practical tests have proved and scientific men have testified to the absolutely unflammable character of asbestos, while the long fibres of that found in Italy have enabled one of the leading companies to produce friezes and ceilings in high and low relief, practically indistinguishable from the plaster mouldings, which are far more expensive and far less a foe to fire. This fact gave interest to a visit we paid the other day to 158 and 160, Charing Cross Road, W.C., where we inspected a wonderful collection of new designs by first-rate

asbestos-metallic cloth, specially prepared for theatre curtains, which not only secures the safety of property, but has a very pleasing appearance. This has already proved its claim to recognition, for a curtain of this material saved the stage and effects of the Queen's Theatre, Manchester, in a fire a few years ago. Now, when local authorities are properly alive to the importance of isolating fires in such public buildings, the asbestos-metallic cloth seems almost essential in pre-

corations to which we have so prominently called attention are further developing and widening the already high fame of the United Asbestos Co., Ltd.

The fibrous nature of the material renders it easy to hang and secure a good grip of the wall or ceiling, while it permanently retains the hard, firm impression made upon its surface by the process of embossing employed by the United Asbestos Co., Ltd. In addition to the wide range of patterns, which architects are invited to study for themselves, there is, at 158, Charing Cross Road, W.C., some excellent designs of friezes in the Old Florentine, Italian Renaissance and other styles—the whole collection demonstrating that the "Salamander" decorations, while absolutely fireproof, are also of an artistic character, and can be adapted to any schemes of decoration with unvarying success. In addition to the West End showrooms, these decorations can be seen at the head office of the company, Dock House, Billiter Street, E.C., or at the branches in Manchester, Liverpool, Glasgow, Newcastle, Birmingham, &c.



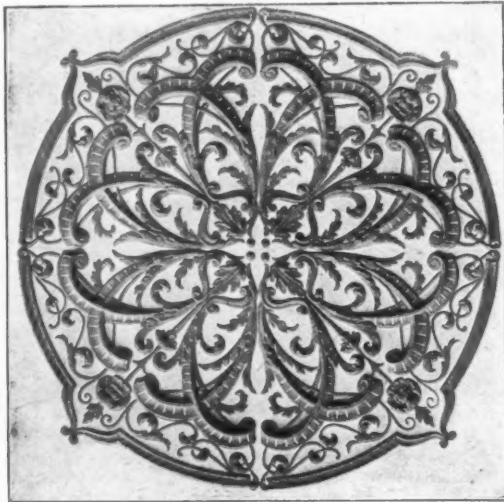
"SALAMANDER" CEILING—VICTORIAN.

venting flames from the stage passing to the auditorium and *vice versa*.

For Colonial purposes "Besolite" provides an excellent substitute for wood in connection with roofs, bungalows and portable buildings. This is both fire and weather proof, and being made in thin sheets gives a thoroughly reliable partition or matchlining at the same time being fireproof enough to withstand any flames. With characteristic enterprise, the

MESSRS. SWAINE, BOURNE & SON, the well-known artists in stained glass, of King Edward's Road, Birmingham, recently held a social gathering of their employees, at which, after tea had been partaken of, many congratulatory speeches were made. Opportunity was taken by Mr. J. W. Swan to urge the claims of the Work's Sick and Dividend Society, and by Mr. G. W. Hopton to enlist further sympathy with the hospital weekly collection. Mrs. Bourne gracefully expressed her pleasure at meeting the workpeople, and Mr. K. S. Bourne brought the evening to a conclusion with a very enjoyable lime-light exhibition.

ELECTRICAL INSTALLATION RULES.—The new edition for 1898 of the "Electrical Installation Rules" of the Liverpool and London and Globe Insurance Company forms the third year's issue of the new copyright compilation. The value of this periodical re-issue is shown in the present edition by the inclu-



"SALAMANDER" CEILING—FRENCH RENAISSANCE.

artists in ceiling decorations. Three of these we are able to reproduce, and although the illustrations do not shew the fine effect of the originals, they are sufficiently good to indicate the excellent relief obtained.

While making a leading feature of these excellent ceiling decorations, the United Asbestos Co., Ltd., have paid special attention to the manipulation of their production, so that it can be readily adapted for other decorative purposes. Thus they have an

Company has conducted a series of important experiments, with the view of extending the use of asbestos in as many directions as possible, and their asbestos ropes and ladders, cloth for tents, millboard for lining ceilings, floors, roofs, &c., and other manufactures have attained considerable renown, not only at home but in other countries and the British Colonies. These goods have established their reputation and, before concluding, we would remark that the "Salamander" ceiling de-



"SALAMANDER" CEILING—FRENCH RENAISSANCE.

sion of several added rules. For instance, the growth of the adoption of "free wiring" in various districts has necessitated rules specially dealing with the lead-covered twin wires used in this class of work, and further slight additions deal with precautions desirable in specific risks such as corn, oil and textile mills.

THE STANTON IRONWORKS has secured the contract for the supply of cast-iron pipes to the Walton-on-Thames Urban District Council. The amount of the tender was £11,779.

THE TUBAL WORKS, BARRHEAD.

BARRHEAD is a flourishing town about seven miles from Glasgow, to which trains run from the Central and St. Enoch's Stations. It is a town growing so rapidly in wealth and importance, that it has recently obtained municipal incorporation, and can now boast a provost, bailies and a town council. In a short time it will probably be the enviable possessor of a municipal debt and clean well-paved streets. Not an inconsiderable proportion of the town's progress is due to the fact that it holds within it the works of Messrs. Shanks & Co., founded only some thirty years ago by Mr. John Shanks, now deceased. This important and ever-increasing business is conducted by Mr. Wm. Shanks and his cousin, Mr. John Shanks, the son of the founder of the firm, both resident in Barrhead. The works cover some twelve acres of ground, a fact which does not sufficiently convey the extent of the operations, because in many of the buildings three and four floors are in use.

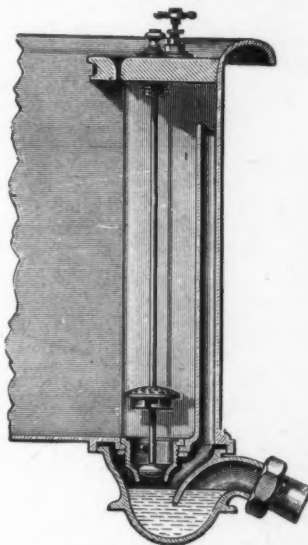
In the process of tracing the finished product to its source, the visitor passes through many workshops—there are 700 hands regularly employed, and earning good wages—but he will follow the processes best by beginning with the foundries. There he will find the moulders at work in a weird light, rendered all the more uncanny by the red glow of the molten brass and iron and the blue flames from the moulds, which have had their hunger satisfied and are well filled up with fiery food. He will see tons upon tons of castings in process—brass taps and fittings of all sorts, so numerous that they must be shovelled up like coal, and baths and water cisterns by the score. From the foundry he will pass to shops where special machinery is at work preparing the brass castings for the lathe and the brass finisher. Everything in the way of specially developed machinery will be found—wonderful lathes

ing being allowed to leave the Tubal Works until it has been proved to be thoroughly sound and complete. To merely enumerate the details of such a huge place would weary the reader. It is all intensely interesting to the beholder. The variety of styles in lavatory basins, in w.c.'s, and not least in baths, is bewildering. The acme of utility united to the perfection of art.

Messrs. Shanks do a very large business in supplying sanitary fittings to ships, and their baths, lavatories, &c., will be found on board the celebrated liners travelling to all parts of the world. They have branches in London, Manchester, Dublin, Glasgow, etc., and possess the confidence of architects of the first grade in all parts of the kingdom. Possessing such facilities for rapid and reliable production, they are every day extending their already huge business, and Barrhead has every reason to bless the day that Mr. John Shanks started the Tubal Works.

Some notable improvements in the design and construction of baths have been made by Messrs. Shanks & Co., and in the "Fin de Siècle" bath they have secured many important points. The discharge is very rapid, and in order to facilitate cleaning, the grating, which is of a large size, is fitted above the valve with a slotted arrangement, so that it can be removed with the fingers. The valve rod is a cleanly, strong and simple arrangement, and the overflow, which is cast on immediately behind the waste recess, enters the waste just above the seal of the trap. Every time taps are turned on, a special nozzle, led from the taps to the top of the overflow, throws a jet of clean water down the side of the overflow channel, so keeping it clean. Being raised as high as possible in the bath, the chance of overflow and consequent soiling is slight. The trap is a circular full way throughout, removable, and adjustable to suit different directions. We give two illustrations of the bath, which has a broad rolled edge, and is finished in a most artistic style with the best enamel. Altogether it presents a combination of the

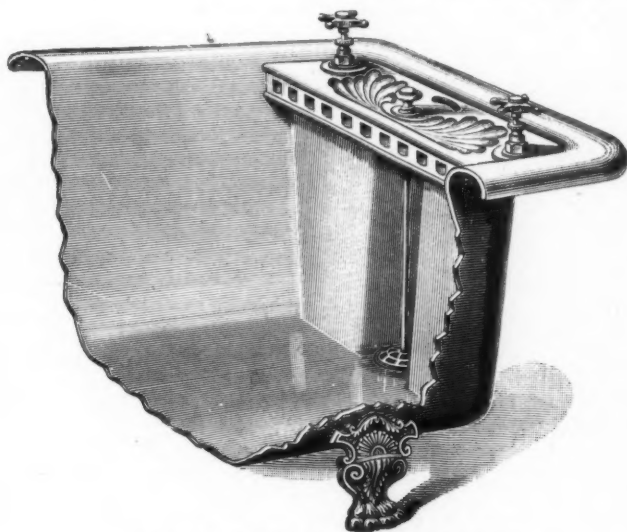
the outlet grating is exceptionally large, and is fitted with the slotted catch arrangement. The longitudinal section shows the system of bringing the water into the basin. Two small orifices send a little stream down the overflow, and two other jets impinge upon



"FIN DE SIECLE" BATH—SECTION OF END.

the grating, so that it may always be cleansed while the other perforations introduce the water direct to the basin.

The "Barrhead" siphonic closets are well known as embodying many advantages, and

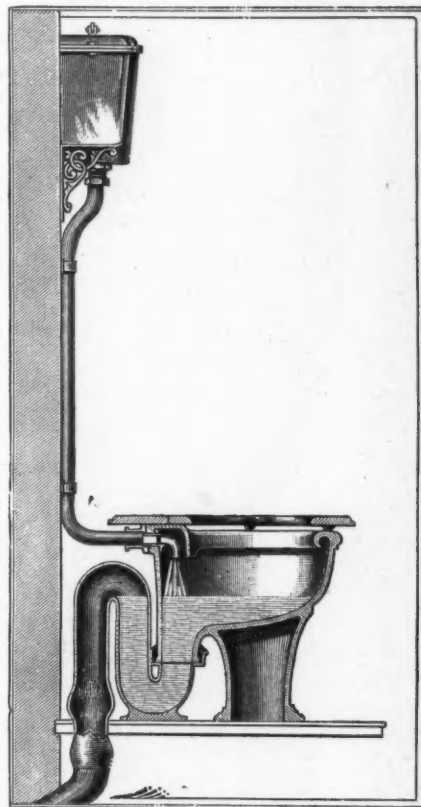


THE "FIN DE SIECLE" BATH—INTERIOR VIEW.

which do in a few seconds what it took possibly hours to accomplish formerly; yet rapidly as the work is done, other departments are ready for it, and it is swallowed up in the ceaseless demand. To the uninitiated it seems as though all the world was waiting for baths. You go from the home of the lathe to other shops where the parts are being fixed together; thence (through rooms where the finished article is stored) to the testing room where pipes and taps are being submitted to the most severe tests, not-

latest ideas in sanitation, with the rapid filling and emptying, the absence of which has been one of the most annoying features of many other baths.

In lavatories the firm has brought out the "Modern" design. An open recess is provided at the back of the basin, and over the top is a projection in porcelain through which the waste pull works. The valve rod is of nickel-plated brass, and the discharge can be made in less than half the time usually required. As in the case of the baths,



THE "BARRHEAD" SIPHONIC CLOSET.

not containing the defects frequently associated with those that discharge by siphonic action. There is only one trap, with an 8-in. seal, and a surface of water in the

basin of 13½ by 11 in. The only joint in the closet is continuously under water, and the trap being of lead can be soldered direct to the lead soil pipe. There is a powerful siphonic discharge of two gallons of water, and, in order to ensure its proper efficiency, the patent "Lever" cistern has been brought out in conjunction with the "Barr-head" closet.

Another special line which Messrs. Shanks & Co. have made peculiarly their own is that of supplying fittings specially adapted for hospitals and infirmaries. They have supplied and fitted up some of the best operating theatres in this country with their special treadle-action lavatories for surgeons' use. These lavatories are made with glass taps, and the doctor does not require to touch brass taps during an operation, the water being obtained by pressing the treadles with foot.

The "Victorian" sink has also met with a good reception from doctors, as there is not a finer sink for cleansing bed-pans than this complete apparatus. Architects who have infirmaries on hand would do well to send for sheets illustrating their hospital fittings.

In thus particularising these specialties of Messrs. Shanks & Co., we have but merely indicated a few useful points to shew how carefully they attend to the details of their sanitary constructions. In their latest catalogue, which they describe as an "epitome of patented sanitary appliances," will be found a full list of their productions splendidly illustrated in colours, and typical of the excellence which pervades every department of their operations.

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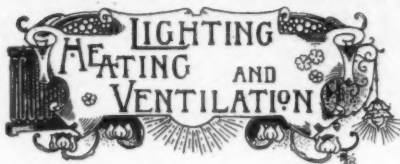
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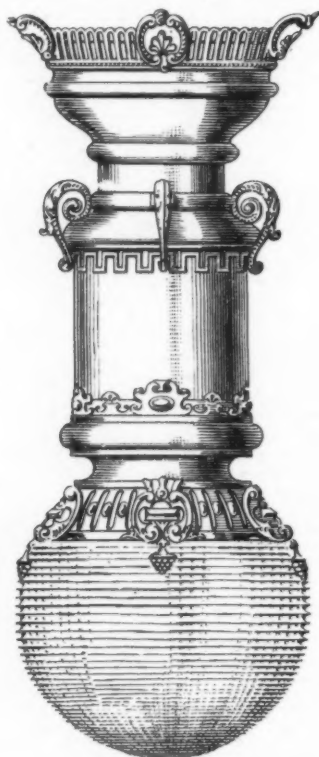
Artistic Arc Lighting.

It is a well-known fact that in theory the Electric Arc lamp is the cheapest of all artificial illuminants, but the general use of these lamps for interior lighting has hitherto been restricted for several reasons; one being that most of these lamps are so extremely ugly in their construction that they are a positive eye-sore in any well-appointed premises. Another serious objection is that ordinary arc lamps of the "open" type, require re-carbonising daily, which, in many places is a serious nuisance. To get over these difficulties, a new lamp, styled the "Ajax," is now being put on the market, and we illustrate it herewith. The designs shewn are known as the "Rococo" and "Flemish," the former being made in fire-gilt finish, and the latter in antique brass. Several other designs are also made, cheap as well as expensive, for all classes of service. It will be seen that the styles shewn are extremely elegant, suited for the best class of work in clubs, residences, hotels, bars, restaurants, &c. These lamps are of the "enclosed" type, in which the

light as to greatly increase the effective area of surface lighted. In fact, an enclosed lamp, fitted with these globes, burning perfectly steadily at all times, without hissing or chattering, is, in all respects, an ideal light, both in colour and intensity, as it is



THE AJAX LAMP.



THE AJAX LAMP.

not red or yellow, like gas or incandescent electric light, nor ghastly green, like incandescent gas burners. It is almost daylight, equally diffused, and not obtrusively glaring like the ordinary arc lamps.

These lamps are made for a current of 4½ or 7 amperes, but a smaller model of 2½ amperes is made, which is most suitable for lighting residences. It is very ornamental and is provided with a handsome acorn-shaped "Holophane" globe, the extreme length being only 22 in. The lamps shewn in our sketches are 30 in. long over all. The lamps are made for direct current circuits only, but those for alternating systems will, we are informed, soon be ready.

To shew the economy of this system, it is only necessary to cite the case of a large London public-house where incandescent electric light is used, and where, if these lamps were put in, the owners would save £115 per year, as well as get a better light, and save a considerable cost in wiring and fixtures. It will therefore be seen that architects now have at their disposition an improved system of lighting which is not only ornamental in appearance, but a great advantage to their customers as well. The "Ajax" lamp can be obtained from any electrical contractor.

Fireplaces and Stoves.

From Boyd's Works and Showrooms, 105, New Bond Street, W., which have been in operation for a century, we have received two catalogues—one dealing with the utilitarian aspect, the other with the decorative side of their fresh-air and other fireplaces and stoves, which they describe as "up to date" as regards quality and price. Each section is complete and interesting, and the

carbons burn in an inner globe, thereby prolonging their life from the usual 12 or 14 hours, to from 150 to 200 hours, so that new carbons are required once a month. The annual saving in carbons alone is nearly £5 per annum, while the annoyance of constant trimming is avoided. The lamps are all provided with the "Holophane" light-diffusing globes (whose merits were amply demonstrated in our December number), which are not only extremely elegant in appearance, but so soften and diffuse the

excellent diagrams, sections and elevations in the first, will do much to facilitate the study of the many excellent points which the firm have introduced into their stoves. In the decorative section we notice a well-designed engraved brass register grate in the style of Louis XVI., a polished bright grate of Flemish design, and an effective register grate of Italian pattern. These are but a brief selection where so many are excellent and all are good.

Contracts Accepted.

For the completion of the electric light wiring, &c., for the Town Hall, Brighton, the tender of Mr. A. H. Wood, Army and Navy Mansions, Victoria Street, S.W., was accepted. It amounted to £705.

THE tender of Mr. C. D. Phillips, of the Emlyn Works, Newport, Mon., has been accepted, from among those of thirty-eight firms, for an electric lighting plant for the Westwood Waterworks for the Newport Corporation.

THE City Council of Coventry has accepted the tender of Messrs. Ashwell & Nesbit to heat St. Mary's Hall.

For heating some business premises in Workington, thirty-four tenders were received, ranging from £229 to £570. The former, submitted by Messrs. J. King, Ltd., of Liverpool, was accepted.

TRADE FEDERATION.

THROUGHOUT the manufacturing and building industries, the necessity for complete federations of masters as well as of men seems to be recognised in a most hopeful spirit. Last year saw the formation of the West of England and South Wales Federation, consisting of builders in Bath, Bridgewater, Cardiff, Newport, Taunton, Plymouth and Weston-super-Mare. A Midland Association has been formed for the midland counties, and the preliminary arrangements for a Yorkshire Federation are now nearing completion. This is, perhaps, one of the most significant signs of the growing strength of the movement, for hitherto there has been considerable opposition to the idea among the master builders of our largest counties. The success of the Lancashire Federation, however, together with the increasing demands of the operatives, are the two elements which have silenced opposition, and will result in the formation of one of the strongest federations in the provinces. With the whole industry thus federated together there should be less friction between the masters and the various sections of workmen with whom they have to deal. The mere knowledge that such combinations are in existence will tend to restrain the agitating endeavours of certain trade union officials.

"ART POTTERY IN LAMBETH,"

a finely Illustrated Account of the Life and Work of the late

SIR HENRY DOULTON,

appeared in "ARCHITECTURE" for January.



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A New Brick.

WE have become so accustomed to the ordinary form of brick that almost any variation of its shape or pattern calls for comment. We have heard that an entirely novel idea is about to be introduced to brickmakers in the form of a grooved and tongued brick, which secures a perfectly watertight joint. A Yorkshire architect has the credit of the innovation—full particulars of which will appear in these columns next month.

Red Bricks.

THE annual production of red bricks by Messrs. T. Lawrence & Sons is about fourteen millions, and they have been used in all the principal towns of the country. Among the firm's specialities are the T. L. B. rubbers and cutters made at their Swinley works, near Ascot, and used for window-heads, arches, etc., moulded and carved work as well as plain gauged work. These bricks have been upon the market twenty years, and no instance has ever been reported where one has been damaged by the action of the weather. The hand-made pressed red-faced bricks are as rich in colour as the rubbers referred to. They are perfectly true in shape, because, although having the bloom and charm of hand-made bricks they are pressed into a true shape when partially dry. The clay from which they are made contains no lime, thus enabling them to maintain the purity of their colour. In addition to their manufactures of brick, Messrs. Lawrence & Sons make tiles of every kind at their yards at Wick Hill and Warfield, and inquiries addressed to their headquarters at Bracknell, Berks, will elicit prompt dispatch of pattern-sheets and other information.

ALDERSHOT.—Messrs. G. Wood & Sons, Brades Blue Brick Works, Oldbury, near Birmingham, will supply 200,000 Staffordshire blue bricks to Messrs. W. H. Saunders & Co., contractors, Southampton. The delivery is to be made at Aldershot.

THE SANITARY INSTITUTE will hold its seventeenth congress and exhibition in Birmingham next September.

PORTSEA HOSPITAL, PORTSMOUTH.—We hear that the Bank's patent fireproof flooring, described in our pages last month, has been selected for the Royal Portsea Hospital at Portsmouth.

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BUILDERS AND BUILDINGS.

Camberwell.—Sir E. J. Poynter opened the Arts and Craft Institute, Camberwell, on the 6th ult. This has been erected from the designs of Mr. Maurice B. Adams, F.R.I.B.A., and adds a most effective architectural adornment to the Peckham Road. The building is in Portland stone and Lawrence's red-brick facings, while Mr. W. Goscombe John has executed the sculptured pediment. The lift was supplied by Messrs. Archibald Smith & Stevens, the flock papers by Messrs. Jeffrey & Co. and the decoration of the galleries was executed in accordance with suggestions by Sir E. Burne Jones, Bart., and Sir Wyke Bayliss, P.R.B.A. The design of the wall papers is a conventional treatment of acanthus leaf arranged to form a well-covered paper suitable for a background. The paper was executed in red flocks on a darker red flock ground, the colouring being taken from a special sketch by Sir E. Burne Jones.

Nottingham.—The Nottingham Master Builders' Association has unanimously elected the following gentlemen as officers for the ensuing year; Mr. James Wright, president; Mr. William Edgar, vice-president; Mr. J. W. Woodsend, treasurer; and Mr. Frank Hodson, hon. secretary.

Stockton.—The first annual general meeting of the Tees-Side and District Master Builders' Association was held at Stockton on the 12th ult., under the presidency of Mr. John Davison. This gentleman was re-elected president, Mr. Dickenson vice-president, Mr. Burn hon. treasurer, and Mr. W. C. Creaser secretary. It was announced that members were seeking to uphold the principle of an arbitration clause in contracts, and at the subsequent dinner Mr. J. H. Bottomley, as an architect of twenty years' standing in the district, expressed his pleasure at the formation of the association.

Hereford.—Although only formed in March of last year, the Hereford and District Master Builders' Association is already a pronounced success. Mr. W. J. Bowes presided over the first annual dinner. In response to the toast of the National Association of Master Builders, Mr. A. Krauss, of Bristol, spoke, urging Hereford builders never to sign a contract without an arbitration clause. In replying for the architects and surveyors, Mr. Lingen Barker said he was in favour of the insertion of the clause.

King's Heath.—A new Wesleyan church has been dedicated at King's Heath, near Birmingham. Mr. William Hale was the architect and the Tamar and Coalville Tile Company supplied a high dado of ornamental glazed tiles. The roof carvings and the corbels are the work of Mr. Martyn, of Cheltenham, and Messrs. Camm & Co. were responsible for the stained glass. The heat-

ing arrangements were in the hands of Messrs. Renton, Gibbs & Co.; Messrs. Hart & Son, Peard & Co., supplying the gas fittings.

The Central Association.—A few evenings ago the Central Association of Master Builders of London, held a dinner to entertain the President and Council of the National Association of Master Builders. Mr. W. Shepherd presided, and was supported by Professor Aitchison, R.A., Mr. Hampden W. Pratt, Mr. J. Stevenson Jones, Alderman Bowen, J.P., Messrs. Thomas Blashill, T. F. Rider, A. Krauss, J. H. Colls, F. J. Dove, H. H. Bartlett, Frank May, Henry Holiday, Chas. Wall, and others.

Bolton.—A new operating theatre has been added to the Bolton Infirmary, Mr. James Briscoe having designed the building and supervised the work. The main contract was let to Mr. John Roberts, builder; Messrs. Maw & Co. supplied the tiles, Messrs. Twyford & Co. the lavatory fittings, and Messrs. Newton, Chambers & Co., Ltd., the radiators—these being of their well-known "Fervent" type, No. 46, which are commended by reason of their economy in cost, as well as their durability in use and effectiveness in operation. We may add that Messrs. Newton, Chambers & Co. make a speciality of radiators for use in hospitals and infirmaries.

Southampton.—The firm of Messrs. F. & J. Young, builders and contractors, Southampton, held a festive gathering a few days ago on the completion of their new offices and works in the Upper Clovelly Road. Among the recent work executed by the firm was the restoration of the Holy Trinity Church, Southampton.

ROYAL INSTITUTE PRIZES.

THE following prizes and studentships have been awarded in connection with the Royal Institute of British Architects:—

Measured Drawings: Institute Silver Medal and ten guineas, Thomas Tyrwhitt, 36, St. George's Square, S.W.; Medal of Merit, Cyril Wontner Smith, 34, Woodberry Grove, Finsbury Park, N.

Pugin Travelling Studentship: Silver Medal and £40 for travel in Great Britain and Ireland and study of Mediaeval Buildings. Studentship, Charles de Gruchy, 13, Melody Road, Wandsworth. Medal of Merit, Benjamin Bower, 168, Vauxhall Road, Birmingham.

Title Prize for Designs according to the Principles of Palladio, Vignola, Wren, or Chambers, and £30 for travel and study in Italy, John Stevens Lee, 78, Comeragh Road, West Kensington, W. Medal of Merit and ten guineas, Thomas A. Pole, 35, Bernard Street, Russell Square, W.C.

Grissell Gold Medal and ten guineas for design and construction. Subject, a Small Country Church. Harbottle Reed, 12, Castle Street, Exeter. Medal of Merit, William Stanley Bates, 59, Clarence Road, Clapton, N.E.

Aldwinckle Studentship and £50 for travel and study in Spain, James B. Fulton, 34, Mecklenburgh Square, W.C.

Arthur Cates Prizes for testimonies of study prepared by students for the final examinations: Percy Morris, 67, Elliscombe Road, Old Charlton, Kent. Laurence Hobson, Hale Road, Liscard, Cheshire.

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BUSINESS CHANGES.

Limited Liability Company.

The Pumphouse Blue Brick Works and Tileries, West Bromwich, has been registered as a private limited company under the style of PETER WOOD, LTD.

Partnership Changes.

Messrs. WM. EVE & SON, architects and surveyors, 10, Union Court, Old Broad Street, E.C., have taken Mr. Frank Norman Eve (the youngest son of their senior member) into partnership. The style of the firm is now WILLIAM EVE & SONS. Mr. F. N. Eve has been in the office for the last twelve years.

Mr. A. HARRY HERON, architect, 27, Fitzroy Street, Fitzroy Square, W., has taken Mr. Clifford Bellairs into partnership. The style of the firm will be HERON & BELLAIRS.

Mr. DAVID BALFOUR, M.I.C.E., F.G.S., 3, St. Nicholas Buildings, Newcastle-on-Tyne, has taken into partnership his son Mr. David Balfour, Junior, A.M.I.C.E., and the business will in future be carried on under the style of D. BALFOUR & SON.

The partnership hitherto subsisting between Mr. M. W. BEARCROFT and Mr. THOMAS WILKINSON, builders and joiners, Eston, *vid* Middlesbrough, has been dissolved. The business will be carried on by the latter gentleman in his own name at Imeson Street, South Eston.

The partnership existing between Messrs. OWENS & WATKINS, of the Pentrych Brick Works, Walnut Tree, near Cardiff, has been dissolved, Mr. Watkins retiring. Henceforth the business will be carried on by EVAN OWENS & CO.

The business of Mr. WM. RUECROFT, joiner and builder, Kirkgate, Thirsk, is now carried on under the style of WILLIAM RUECROFT & SON.

Mr. TIMOTHY HODGSON and Mr. ISAAC HODGSON, builders and contractors, Keswick, have dissolved partnership by mutual consent. The latter gentleman will continue the business at 24, Stanger Street, Keswick, under the style of ISAAC HODGSON, LATE T. & I. HODGSON.

Appointment.

Mr. GEORGE ELKINGTON, F.R.I.B.A., 95, Cannon Street, E.C., has been appointed surveyor to the Coopers' Company.

Removals.

Mr. C. J. INNOCENT, F.R.I.B.A., of Sheffield, has removed to 22, High Street, Sheffield.

Mr. W. EVERSDEEN, quantity surveyor, has removed from Southampton Buildings to 43 Chancery Lane, E.C.

Architecture

FOR FEBRUARY, 1898.

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By the EDITOR. 15 Illustrations.

THROUGH CELESTIAL DOORWAYS.

By L. B. STARR. 5 Illustrations.

THE CHURCHES OF SOUTH-WEST FRANCE.

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ARCHITECTURE SUPPLEMENT

APRIL, 1898.

Architecture Supplement.

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Forthcoming Events.

MARCH.

- 21.—R.I.B.A. Mr. G. H. Birch, F.S.A., on "The Heraldry of Antiquity," and Mr. J. D. Crace on "Heraldic Drawing." Sanitary Institute. Mr. J. Osborne Smith, F.R.I.B.A., on "The Principles of Calculating Areas, Cubic Spaces, &c."
- 25.—A. A. Mr. T. C. Cunningham on "Constructional Steelwork."
- 30.—Mr. A. W. Brightmore on "The Masonry Dam Problem" at the Liverpool Engineering Society.
- 31.—General meeting Glasgow Institute of Architects.

APRIL.

- 4.—Mr. J. F. Doyle, F.R.I.B.A., on "The Royal Insurance Buildings" at a meeting of the Liverpool Architectural Association.
- 12.—Annual General Meeting of the Sheffield Society of Architects and Surveyors.
- 21.—Society of Architects Annual Dinner.

MAY.

- Exhibition of Domestic Art Industries at the Imperial Institute, S.W.

JULY.

- 19—26.—The Annual Meeting of the Royal Archaeological Institute at Lancaster.

NOTES OF THE MONTH.

Architecture.

ARCHITECTURE will, in future, be published in the middle of the month, on the 15th—a fact we hope subscribers and advertisers will note.

The Editor of the Supplement invites early intimation of changes in the *personnel* of firms interested in architectural work, and will be pleased to receive items of news regarding work being carried out in the country. Such communications should be sent in as early as possible.

The current issue of ARCHITECTURE contains the conclusion of the article on Ely Cathedral; a fully illustrated account of Mr. Beit's house in Park Lane, W., designed by Messrs. Balfour & Turner; an interesting account of the architectural features to be found in the valley of the Moselle from Coblenz to Trèves, and other articles full of interest to the professional man.

The Gothic Dome.

A correspondent at Cambridge writes as follows:—Had the Reformation, so called, never arisen to stop church building, and had the Renaissance never come about to cut short the development of Gothic architecture, should we have ever had a Gothic dome or cupola? I think so. As in the Norman pinnacle we get the germ of the spire, so in the ogee-headed cupolas surmounting the turrets—say at King's College Chapel—we get the germ that might have been, and still might be, developed into something approaching a dome. The ribs, indeed, of such a dome are to be seen over the cross at Salisbury, and, again, there is the corona at Newcastle, but this is a square tower, or, at any rate, a rectangular one. One of the designs for Truro Cathedral was distinguished by a hexagon, evidently suggested by the Octagon at Ely, and this was finished off with a corona similar to those I have mentioned. Sir Christopher Wren has given a hint in his finishing to the Tom gateway at Christ Church, Oxford. The vaulting, too, of many towers, *e.g.*, Salisbury, and of the octagon at Ely nearly approached the domical.

Testing Fire-Resistants.

At the third meeting of the newly-formed commercial section of the British Fire Prevention Committee the question of independent tests with fire-resisting materials was dealt with from the manufacturers' aspect. The sixty firms associated with the section was strongly represented, and Mr. Farrow, F.R.I.B.A., the new chairman of the section, presided, supported by Mr. Edwin O. Sachs for the executive. Various resolutions were

passed expressing the desirability of arranging reliable independent tests in a manner which would merit the confidence of the general public and of the professions interested. Some of the principles as to the manner of arranging the tests, the construction of testing stations, &c., were also formulated for the consideration of the executive. With these resolutions, expressing the support of the commercial section as regards independent testing, the execution of this scheme is practically decided, and it now only remains with the executive to make workable arrangements of a thoroughly scientific and practical character. One of the most important pieces of work on the committee's programme has thus been inaugurated, and London will at last have a centre where reliable information regarding fire-resisting construction will be easily obtainable. New York and Hamburg, it will be remembered, have already had some similar tests, but on a smaller scale than here intended.

Building in St. Lucia.

Mr. J. T. Rea has written an excellent paper on "Building in St. Lucia," which has been published on behalf of the Association of Surveyors in H.M. Service, and will be of interest to all who ever think of the West Indies. There are three descriptions of houses to be considered, *viz.*, those of bamboo and grass, of wood, and of stone or brick. The first kind are primitive indeed, the second generally constructed in the ordinary American style, with fretwork patterns and the initials of the owners carved on the facade. Seeing that the import tariff on bricks is 7s. 6d. per thousand, we may not expect to find many brick houses apart from the Government offices, materials for which are admitted free. According to Mr. Rea, the only attempt at architectural beauty finds expression in the new Roman Catholic Church, which is built of stone and iron. This is in a pseudo-Romanesque style, and is said to have been designed by Father Scoles, who served his indentures as an architect in England under his father, who had been a pupil of Pugin. He died in 1896, and the work was subsequently carried out by Mr. J. J. Meagher, A.M.I.C.E. The new Government House, overlooking Castries Harbour, is a substantial building with the ground floor walls built of local rubble masonry, while the first floor is of stout timber work, overlaid with the "Jhilmil" patent metal lathing. This building was finished in 1895, and the fact that "Jhilmil" had been used in such an official position gave it a prestige throughout the island, which it still retains. Mr. Rea's paper contains many points of value to those looking for professional work in tropical countries.

A SANITARY PIONEER.

THE name of Jennings is a familiar word to all who have ever descended below the road-level in London, and calls to mind a noted sanitarian to whose persistency, no less than his foresight, the Metropolis owes the removal of the old unsightly conveniences, and the substitution of the present underground arrangements. More than forty years ago, the late Mr. George Jennings suggested to the City engineer the idea which is now being universally adopted, and, not only made elaborate designs, but offered to supply and fix the necessary appliances free of charge. But such an innovation was then lightly esteemed. In fitting up the British hospitals during the Crimean war, Mr. Jennings won renown, and, in connection with the Vienna Exhibition of 1873, he constructed five miles of stoneware drain pipes and fitted up six hundred appliances. During the following years the business at Lambeth developed, and, when in 1882 the founder died, his sons found themselves possessed of an industry of world-wide reputation.

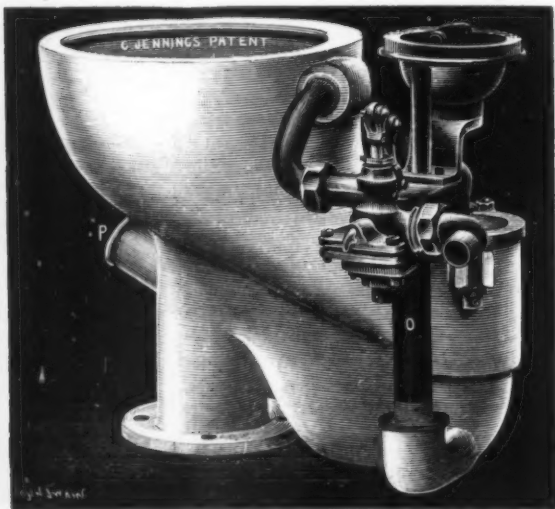
In their hands it has progressed wonderfully, and the busy activity at the works in Lambeth, as well as at the terra cotta and pottery establishments at Parkstone, Dorset, is the result of their efforts to keep abreast of sanitary methods. In the showroom we recently saw some diagrams of the Turkish bath fitted up for Sir Edward Lawson, which the Prince of Wales has personally commended, while the appliances for a new closet compartment at Windsor Castle were being arranged. This latter is fitted with "the closet of the century." This is a syphonic discharge closet, combining the simplicity of the ordinary "flush-down" cottage basin and trap with the advantage of the valve closet. The service pipe for the cistern has two connections—one leading into the basin in the usual manner, and the other leading into the top of the long leg of the syphon pipe. Consequently, the flush from the cistern is divided into two streams, one of which flushes the basin. The other, rushing down the leg, expels the air through the puff pipe, starts the syphonic

supplied in white or decorated earthenware, strong fire clay or enamelled iron.

We illustrate a valve closet made by the firm, with the basin and trap in one piece of earthenware. The sketch shews the elevation, back view, of a closet fitted with an improved supply valve. In calling our attention to this, prominence has been given to the fact that 128,000 of this type were sold within twenty-eight years of its introduction. The cylinder, or plug chamber, has been entirely dispensed with, and although it has had competitors, none have displaced it when once adopted. Another illustration is a sectional elevation of the Jennings patent valve closet and trap, shewing the plunger raised and the contents passing away. In action this type is noiseless; in construction it is extremely simple. It only requires to be cemented air-tight to the soil pipe or drain, and the water service laid on from the cistern or main to the union S of the improved regulating supply valve, which is suitable for any pressure of water.

Sanitary arrangements for hospitals and similar institutions have been a subject of special study with the firm, who have a lever-acting supply valve for baths which prevents hot water entering the bath until the cold is first of all turned on. Thus the possibility of the scalding of patients is satisfactorily prevented, and twenty porcelain baths so fitted have been supplied to the infirmary at Tooting Bec. This is only one of the many ingenious arrangements devised for the convenience of those who suffer. In quick filling and rapidly emptying baths for ordinary use, the firm have one or two good things—decided improvements on the older methods by which baths require a long waste of time before being ready for use.

In the works at Lambeth about three hundred men are engaged on sanitary work, the factory being entirely self-contained—all the carpenters' work being done on the premises, where also is the firm's own foundry. Away in Dorset, too, is another large establishment where the stoneware is prepared. The clay is of a superior quality, as is shewn by a drain pipe of salt-glazed stoneware, now to be seen in the Lambeth packing room. This was laid in the barracks at Portsmouth in 1867, and, after having done service for a quarter of a century, was taken up, in consequence of alterations, and discovered to be as sound as when originally laid. There is hardly a local authority in or near London by whom the productions of Mr. George Jennings have not been tried, and the test of time has sustained their high character. Space prevents an enumeration of the many notable services the firm has rendered to sanitary science, but, in drawing attention to one or two specialities to be seen in the showroom, we are inviting architects to become acquainted with the many other good features there to be seen.



VALVE CLOSET—BY JENNINGS.

action and empties the basin. A simple after-flush arrangement in the cistern quickly refills the basin with clean water. The full basin of water is 6 in. in depth, with a seal of 3 in., a surface area of 12 in. by 10 in., and the whole closet is free from mechanism. There is a special form of patented outlet joint which secures an absolute and permanent air-tight connection to the lead trap above or below the floor level. It can be

WOOD BLOCK FLOORS.

THE advance in the popularity of wood blocks for floors still continues, and to meet the demand in the country, a well-known firm in the Midlands has lately gone to great expense in setting up the most modern plant for the accurate manufacture of the blocks. Not only have Messrs. Hollis Bros. & Co. a splendidly equipped establishment at



VALVE CLOSET AND TRAP—SECTION.

Leicester, but they have capital facilities at Hull for dealing with their large business.

The bulk of their wood block floors are laid in the old way. The block is bevel grooved low down at the sides, and when bedded in mastic of a special kind a splendid key is formed, which provides sufficiently for the stability of the work—if the mastic is of proper temper and quality. Of course, proper care must be taken that due time is allowed to elapse before the wood work is put on the concrete, the dampness of that sometimes causing trouble.

While confident of the substantial character of the work when their ordinary well-seasoned blocks are laid in special mastic, Messrs. Hollis Bros. & Co. have provided for those more sceptical as to the security of the bond, by having the blocks matched at ends and sides, so that each block has a quadruple bond in addition to the mastic which overlaps the groove. A rather cheaper and not less effective method is the triple tongue bond system which this Leicester firm has, so far as we know, been the first to introduce in the exact way they have applied it. The blocks are grooved on the sides, a galvanised tongue being pushed into each angle in a way that effectually secures the block. This idea has already been patented and should materially assist the development of the firm's business.

In all work the greatest possible care should be taken in cutting the blocks, and it is not universally known that to obtain the best results as regards wear the grain should be vertical—a method always adopted by Messrs. Hollis Bros. & Co. in the preparation of their floors. These they can lay in deal, pitch pine, oak or teak, specially recommending a maple floor, which they believe has a great future, combining splendid wearing qualities with a fine appearance.

THAT old-established paper, the *Timber Trades Journal*, published its twenty-fifth special issue on the 19th ult. Among the most attractive features was a useful series of articles on the timber of the Southern States of America, written by a member of the staff who spent four months in visiting those regions. We are glad to see this wonderful *Journal* maintaining the vigour and enterprise of its youth.

GRANOLITHIC.

Its Uses and Merits.

For Paving.

THE battle of the pavements continues to divide local authorities into various camps, the different materials having their interested adherents who refuse to recognise the merits of rivals. Claims are made of the most extravagant nature as to the merits of these competing systems, so that confusion must prevail unless actual examination is made of the results after the test of wear. This we propose to undertake, placing Granolithic pavements in the front rank as one of the most universally adopted stone pavements of the world. Even in Sydney, where wood paving is popular, because the local hardwoods can be thus utilised, this product of Scottish ingenuity finds a permanent place in the public pathways. Laid there six years ago, it still forms an even, pleasant pavement—a striking contrast to the ordinary flag pavement and asphalt blocks, with which we are unfavourably familiar. For durability the material has an unquestioned position, the granite which constitutes the main element of Granolithic being obtained from the famous quarries of Dalbeattie, N.B., and hundreds of practical demonstrations of its wearing qualities being available. About twenty years ago Leadenhall Street, London, was laid with Granolithic paving, and although over sixty millions of people must have passed over it, it preserves an evenness of surface and remarkable freedom from the wrinkles usually associated with age. Kirkaldy's test establishes the strength, if actual experience did not assert the fact, for he certifies that one square foot of Stuart's Granolithic paving was crushed at 562.4 tons—a result the importance of which need not be emphasised to our practical readers. More than 1,300 miles of Granolithic pavement has been laid in the busiest thoroughfares of the most active cities of the world, and it is likely to successfully withstand the wear of ages.

The Strength of Granolithic

No doubt has ever been expressed as to the ability of this system to concentrate a fire in the apartment in which it breaks out, and a Granolithic floor slab, 10 ft. square and 2½ in. thick, has borne a weight of 22 tons without a sign of failure—strong testimony to its strength. In the new grain warehouse, at Swansea, an arched floor has been constructed of this material, measuring 260 ft. by 60 ft., with spans of 14 ft. 6 in., a rise of 15½ in. and a thickness at the crown of 3 in. This floor will carry a safe distributed load of 12 cwt. per foot super. One of the most interesting floors ever constructed is made of Stuart's Granolithic fireproof flooring, viz., in Messrs. Jenner's warehouse in Edinburgh. This is an arched floor with a safe distributed load of 11 cwt. per foot super., the thrust of the arches being taken up by an ingenious system of incased tie rods and horizontal thrust beams. These floors are also damp and sound proof and of great carrying capacity. Panelled floors can be made to span large intervals without intermediate steel joists, and they can be laid with finished worked surfaces or left for mosaics or wood, while arched floors can also be made to any span, and are particularly suitable for works where heavy loads are common.

Stone Dressing.

Granolithic has also been applied for coping, window sills, staircases, and all stone dressings, about a million lineal feet having been used for this purpose in some of the finest buildings of the country. The six staircases in the Commercial Sale Rooms, London, are entirely constructed of this stone. The steps are 6 ft. wide and the

landings are 61 ft. 9 in. in length by 7 ft. 6 in. wide and 4 in. thick, without any iron girders. The Granolithic string-course runs up the end of the steps, being, we believe, the only staircase in London constructed on this principle. At the Hotel Metropole, Brighton, the grand staircase is formed with the same material, and 44,823 lineal feet of coping in the platforms at the Central Railway Station, Perth, were executed in Stuart's Granolithic.

Fireproof Flooring.

While its hard qualities have led to Granolithic being trampled upon in the streets of Europe and America, its qualities have been utilised in the provision of a fireproof floor, to the perfection of which Mr. P. Stuart, F.R.S.A., has devoted much study and considerable experiment. The result is that the "World's" stone—as his Granolithic fire-resisting flooring is frequently described—ensures a light, strong and fireproof floor, extremely rigid, easily adaptable to all purposes, and that has effectually withstood the test of flames as the paving has defied the feet of millions. Perhaps the latest instance of the application of his fireproof system is in the new residence of the Duke of Fife, on Deeside. Mr. Stuart has done much for royalty, his father built Balmoral Castle, and he has prevented a repetition of the disastrous fire that destroyed the previous residence of the Duke of Fife, for Stuart's Granolithic Stone Company, Limited, have made it impossible for a fire to spread in the new Mar Lodge. The main steel girders, between 10 ft. to 13 ft. 5 in. apart, span from wall to wall, the Granolithic fireproof ceiling resting on their lower flanges. The ceiling spans intervals of 18 ft. by 13 ft. 5 in., and although only 4 in. in thickness, will carry a load of 5 cwt. per square foot. The steel girders are encased in Granolithic, which is to be turned up 8 in. along the walls so that the ceiling will be perfectly watertight. Thus, should a fire occur and water be turned on, it will stand to the depth of 8 in. all over the floors, securing complete isolation and preventing fire reaching the floor above or below.

The Granolithic Works.

We have indicated the strength, durability and fireproof qualities of Granolithic, which, from its granite base, obtains the essentials of that stone. It remains but to be said that it was patented by the inventor, Mr. P. Stuart, who is now the managing director of Stuart's Granolithic Stone Company, Limited. Their works present a bold frontage to the Thames at Regent's Dock, E., and their depôts and works cover a large area. The granite crushing mills are at Dalbeattie, N.B., and they have other works elsewhere, but at the registered office, Regent's Dock, London, E., interested enquirers will be able to see actual tests carried out, proclaiming that in all the locations we have specified Granolithic establishes its claim as the "World's" stone.

Wall Paper Friezes.

Mr. Arthur Gwatkin and Mr. F. Hamilton-Jackson, whose designs have given effect to so many walls, have recently prepared some wall-paper friezes for Messrs. Wylie & Lochhead, Ltd., the well-known Scotch decorators. Only the outline is in relief, the spaces between being available for colour decoration. There is sufficient novelty about the designs to claim attention, while the really artistic rendering of some of the friezes should command appreciation.

SANITARY PIPES.—At the meeting of the Works Committee of the St. Pancras Vestry Mr. Blair stated that at the request of the committee he had gone into the tenders for stone-glazed pipes, &c. With regard to the character of the pipes they must give the palm to Doulton's, although some of the others were very good.

CONCRETE.*

Concrete for Foundations.

CONTINUING our review of this excellent book in our last issue, we would commend the author's consideration of the making and mixing of concrete, followed by a very interesting and useful chapter on concrete for artificial foundations. We are glad to see the author's warning against loading a foundation with the walls too rapidly, and, although a reversion to the old plan of putting in foundations of important buildings during the autumn and commencing building operations in the spring is apparently impossible in these times of quick building, some delay should be made, to allow the atmosphere to adequately harden the concrete before building.

Concrete Floors.

In the second part of the work Mr. Potter discusses the employment of concrete for walls, dealing with the various appliances introduced for their efficient construction. He points out that the use of wood can be almost entirely dispensed with in concrete buildings, and suggests the use of Wright's fixing blocks (made from Portland cement and coke breeze) where provision for joinery, &c., is needed. They hold nails and screws as well as wood, and have the further advantage of being fireproof. Another good chapter is that on concrete paving, which leads to the subject of concrete floors—one of the most practical in the whole volume, particularly interesting just now in view of the discussion on the subject of fireproof construction. Mr. Naysmith, of Pimlico, in 1848, invented a plan for making concrete floors, in which was employed plates of thin iron bent so as to form a segment of a circle between which and the floor concrete was used to fill in. Fox & Barrett's floor next attracted attention, and then, in 1854, Mr. Wilkinson, of Newcastle-on-Tyne, brought out a fireproof floor. Four years later, Mr. Bunnett, so well known in connection with revolving shutters, patented a system of hollow interlocking bricks or blocks made so as to joggle or key each other, a principle since adopted in an almost endless variety of ways, particularly in America. In 1857 Mr. Dennett made his first floor, and in 1863 filed a new specification for floors of a very improved character. Reference is made to Homan's system, in which fireclay lintels are used, and also to Fawcett's, in which it is claimed that the lintels protect the load carrying material, dispense with centreing, reduce the dead weight of a solid concrete floor, and enable the latter to be constructed expeditiously. Various American and German inventions are described and illustrated, their best features and worst points being adequately considered.

The book thus covers a very useful subject, and being written by a practical man whose acquaintance with the manufacture and applications of concrete has been thorough and extensive, the work can be most warmly commended. Mr. Potter has not only written a standard work, but he has successfully introduced some of his ideas and the results of many years' observations into a concrete flooring which possesses some excellent features to which reference will be made in an early issue. Meanwhile, we commend a perusal of the work now reviewed.

RUBBER STAIR TREADS.—We hear that the Interchangeable rubber stair treads, described in our January Supplement, are now being fitted at the Hotel Windsor, Victoria Street, Westminster.

* "Concrete: Its Use in Building." By Thomas Potter. London: B. T. Batsford.



Two Exhibitions.

THE Agricultural Hall in "merrie Islington" will be given up from March 18th to the 29th to the Furnishing Trades' Exhibition and Market. We believe that two hundred firms will make a display of their productions, and that the exhibition will be of interest to the furniture trade generally.

From May to August an exhibition of Domestic Art Industries will be held at the Imperial Institute, and promises to be of more use to the art decorator and architect

wood mouldings stained black, Padouk mouldings, Cuba mahogany panels and walnut mouldings, satinwood panels and purple wood mouldings, brown oak mouldings, Cuba mahogany panels and sycamore mouldings. Teak was described as the most reliable and beautiful of woods, while a word of praise was bestowed on Kauri. The natural colour of this wood is like that of plain satinwood, and it makes a capital alternation with darker woods, being particularly suitable for high-class floors and shop fronts.

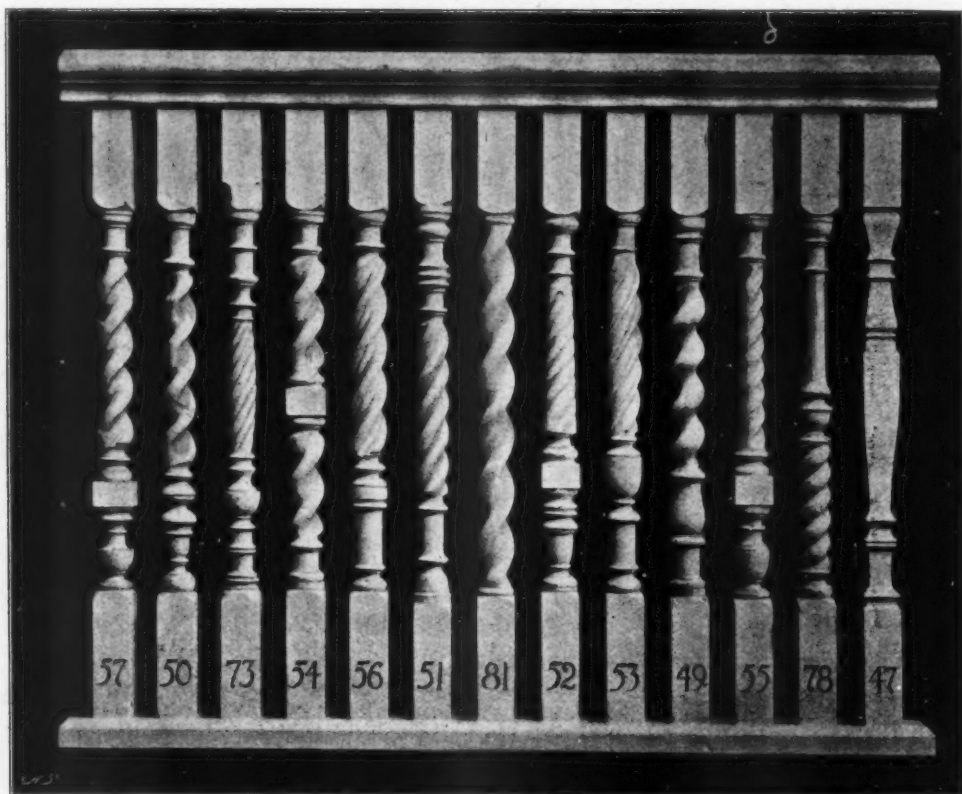
Paperhangings: Export Business.

Every year increases the popularity of British-made paperhangings in foreign markets, and we are glad to hear that the export business in this well-equipped English industry is in a very healthy condition. During February the value of the paperhangings exported to other countries, was

in ceiling decorations the firm made a speciality of the principle of so devising their patterns that they can be made into any lengths, so that, by being cut at the proper points, they can be arranged to suit a room of any size. This, of course, is not quite a novel arrangement, but in the patterns brought out by Messrs. Rottmann & Co. it receives an artistic treatment worthy of all praise. We propose on another occasion to illustrate some of their charming designs; meanwhile architects should inspect their selection. The time thus occupied will be well spent.

Artistic Joinery.

Among the firms whose productions in interior woodwork have won the favour of architects and the recommendations of the artistic, Messrs. Shapland & Petter, Ltd., rank high. Their Raleigh Cabinet Works at Barnstaple are splendidly equipped for



SHAPLAND AND PETTER'S ARTISTIC JOINERY.

than the commercial one mentioned above. The sections will be devoted to everything appertaining to the furnishing and decoration of the home, and the hon. advisory committee already includes the names of Sir George Hayter Chubb, Sir John Hutton and Mr. J. Williams Benn. It will be free from the bazaar element so lowering in the prestige of many similar displays, and it is in contemplation to have a series of lectures on art subjects by competent authorities.

Decorative Timber.

At the last meeting of the Sheffield Society of Architects and Surveyors, over which Mr. R. W. Fowler, F.S.I., presided, Mr. Charles Castle lectured on "Timber for Construction and Decoration." Dealing with the latter part of the subject he shewed specimens of various woods for decorative purposes, including yellow pine panels and pencil cedar mouldings, teak mouldings, Kauri and mahogany mouldings, mahogany panels and canary

£21,845 as compared with £17,671 in the same month of last year. The figures for January and February when added together are even more encouraging, the exports for the first two months of the present year having been valued at £40,853 as compared with £35,200 in the corresponding period of 1897 and £34,625 in the similar months of the preceding year.

Ceiling Decoration.

Centrally ensconced at 26, Garlick Hill, E.C., near the Mansion House Station, Messrs. Rottmann & Co. carry on an extensive business with architects and the leading decorators. They scorn the inartistic productions that too long found favour with the British public, and by the establishment of their own studios have been able to introduce modifications of new styles, and to develop really artistic ideas with a taste and appropriateness to particular schemes of decoration that would be otherwise impossible.

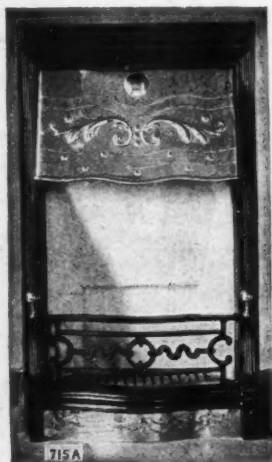
the manufacture of mouldings, balusters, newels, architraves, &c., to the special designs of architects, while among their stock patterns are some excellent designs. The selection of spiral balusters, shewn in the accompanying illustration, is taken from the firm's new catalogue, and it will be observed that the pitch of the twist or spiral work is effectively rendered. Certainly these are well and cleanly executed, and represent the highest possible standard in such descriptions of woodwork. Their catalogue also contains some suggestions for staircase work of a very fine character, as well as illustrations of notable hardwood doors and overdoors.

In the manufacture of wood mantel pieces and overmantels, Messrs. Shapland & Petter, Ltd., have won renown. At their showrooms in Berners Street, London, they have a wide range of their productions in such joinery work—well executed and capitally designed.

LEADING
LONDON
SHOWROOMS.

G. Wright & Co.'s Showrooms.

CENTRALLY situated at 155, Queen Victoria Street, E.C., the showrooms of this well-known Rotherham firm contain as representative a collection of stove grates, tile hearths, chimney-pieces, kitchen ranges, &c., as any similar establishment in the metropolis. Throughout the wide area of the



715A
SWING CANOPY GRATE.

seven floors where on these manufactures are exhibited scarcely a corner is unoccupied, and two or three visits quickly following one another, reveal the extent of the business done. So brisk has been the demand of late that it has been almost impossible to keep certain classes of

goods in stock for many days together. But half the stock might be withdrawn, and yet a thoroughly comprehensive selection of the manufactures we have enumerated remain.

Without setting forth with geographical preciseness the exact locality of the various departments, a general impression should prove of interest. Particularly striking is the show of mantel-pieces in iron, marble, slate, wood, &c., made from the firm's own standard patterns and from special designs. On the occasion of our inspection, two or three tiled grates and mantels, intended for the residence of H.R.H. the Duchess of Battenberg, were on view—fine specimens of industrial art, in which most effective tile work was united to stoves of good appearance and recognised value. Two floors of the large building are occupied with these tiled hearths and mantels. They have a fine array of tiles and tile panels for stoves and hearths, the "Burton Weir" tile slabs for the sides of interior stoves being particularly noticeable. These are 9 inches wide by 36 to 38 inches high, but other sizes can be obtained. They present a great variety, having Barbotine, flower, old gold, majolica, and other ornamental centres. In mantel-pieces, too, there is a very fine selection, as a glance at Catalogue L, No. 36, will verify.

From among the many hundred grates designed by Messrs. G. Wright & Co. it is difficult to particularise, but the warm air ventilating grate, here illustrated, seems one of the most worthy representatives. It will warm a room containing 12,000 to 15,000 cubic feet with a minimum of fuel, owing to the fact that the heat wasted in ordinary stoves is utilised to warm fresh air in the chamber behind the stove, and the pure warm air thus generated is passed into the room. By

the constant admission of fresh air passed through the heating chamber, thorough ventilation is obtained. In fixing, the chimney flue should be constructed to suit the stove, and the connection with the nozzle and also with the fresh air inlet should be made perfectly air-tight, no other brick or cement work being necessary.

Our other illustration shows one of Messrs. Wright & Co.'s swing canopy grates, in which the canopy acts as a register door. It has a projecting solid brick back and Teale economiser, the pattern here set forth being that known as 715 A, in the best black with a repoussé brass canopy.

At 155, Queen Victoria Street, is a large collection of choice wrought iron basket grates, dog grates, Leamington bars in various sizes and patterns from 14 inches to 40 inches wide, curb suites, fire iron rests, fenders, &c. For the manufacture of these goods the firm have every facility at their works at Rotherham, which are now being enlarged to meet an increasing demand.

Sanitary goods form a not inconsiderable part of the firm's business, and an excellent bath on wheels, for use in hospitals, is among the latest specialities in this department. Baths, closets, cisterns, plumbers' brasswork, inspection covers, &c., are included in the space devoted to the display of sanitary appliances, while a large proportion of the space available on the ground floor is given up to cooking apparatus of improved design, while the basement is mainly stocked with stable fittings, pavement lights, &c. The whole of the rooms are excellently lighted, and well adapted for the display of the large and varied range of goods we have indicated.

Passing from the showroom at the rear into Upper Thames Street, E.C., we glanced at the large warehouse at 238, where, on a floor space of about 200 feet by 50 feet, the packing operations are conducted, and a large stock of chimney-pieces, ranges, &c., are stored from whence deliveries are made. Here, too, is a remarkable assortment of the small tiles that go to make up the beautiful hearths and sides of interior stoves, which constitute one of the main departments of the business. Obtaining their supplies of tiles from various sources, Messrs. Wright & Co. are far more favourably situated than were they dependent upon one channel, for the assortment of hues and tints is manifestly



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WARM AIR VENTILATING GRATE.

increased, and these, combined with the excellent work of their own iron-foundry, established in 1854, enable them to assert themselves in a foremost position in the trade. A call at their Queen Victoria Street showrooms will prove of interest to all wishing to see the latest things in this particular class of manufacture.

Messrs. T. & R. Boote, Ltd.

THE premises in Waltham Buildings, Holborn, hitherto occupied by Mr. Thomas Foster, the London agent for Messrs. T. & R. Boote, Ltd., of the Patent Tile Works Burslem, will be vacated on the 25th of March, More convenient offices and show-rooms have been taken at the new Birkbeck Bank Chambers, Southampton Buildings, Holborn, E.C., where architects and others will find a permanent exhibition of their splendid work, for Messrs. Boote did the tile-work for that important building. They have had a very busy time of late, and in addition to the tiling contract for the Blackwall Tunnel have executed work for the Government offices at Pretoria and Rangoon.



Export Business.

Although not so good as in the corresponding period of last year it is gratifying to know that the exports of cement during January and February were in excess of those for the same two months of 1896. In February cement to the weight of 27,904 tons was exported, making a total of 50,696 tons for the year up to date. The values were £48,908 and £88,877 respectively. But for the United States and Canada a less satisfactory chronicle would have been possible, both countries having augmented their receipts. Brazil and the British East Indies shew a falling off, while Australasia maintains its imports with a regularity that is pleasing after the severe remarks in the Blue Book, which we recently had to criticise somewhat unkindly.

Portland Cement.

For three years the Cement Trade Section of the London Chamber of Commerce has been conducting important investigations with regard to the adulteration of cement. As the result of these the following resolution has been adopted:—"That Portland cement be defined as a mixture of two or more suitable materials intimately and artificially mixed in the requisite proportions, and afterwards properly calcined and ground, to which nothing has been added during or after calcination, excepting that an addition not exceeding 2 per cent. of gypsum is permissible for the purpose of regulating the setting." Should there be more than the 2 per cent. of gypsum added to the Portland cement clinker during or after calcination the article so produced is not to be sold as Portland cement, and we understand the following firms have already expressed concurrence with the resolution of the Chamber of Commerce:—Arlesey Lime and Portland Cement Co., Ltd., Arlesey; Ashby & Son, Ltd., London; Booth & Co., Ltd., London; Burham Brick, Lime and Cement Co., Ltd., London; Clitheroe Portland Cement Co., Ltd., Clitheroe; Dartford Portland Cement Co., Ltd., London; Dix, Green & Co., Saffron Walden; Earle, Ltd., Hull; Francis & Co., Ltd., London; Gibbs & Co., Ltd., London; Hilton, Anderson, Brookes & Co., Ltd., London; Hooper & Co., Southampton; Martin, Earle & Co., Ltd., London; A. & W. T. Richardson, London; Robins & Co., Ltd., London; Skelsey's Adamant Co., Ltd., Hull.

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PREPARATION PERSONALLY or by Correspondence, in 3, 6, 9 or 12 months' courses. The special 3 months' finishing course for the Intermediate begins on March 22nd, and for the Final on March 29th. For full particulars apply to Mr. W. CHURCH HOWGATE, A.R.I.B.A., Perchard House, 70, Gower Street, W.C. (close to the British Museum).

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VOL. II. of "ARCHITECTURE"

Has similarly noteworthy contributions on the

Cathedrals of Canterbury, Hereford and Gloucester and

St. Albans Abbey

(See page 8).

"ARCHITECTURE" for JANUARY

Had profusely illustrated articles on

Melrose Abbey and

The late Sir Henry Doulton.

THE FEBRUARY NUMBER

Commenced the article on

Ely Cathedral.

Concluded in the present issue. This, the *Cambridge Express* said, was "illustrated by the most complete set of photographs and drawings we have seen in any publication."

(For contents of March No. see page 8.)



The New Brick.

LAST month we briefly mentioned the fact that a new brick was about to be introduced upon the market. We may now say that the patentee is an Ilkley architect, Mr. Fred S. Smith, who has given his idea the name of "the perfect brick"—a title that does not seem too presumptuous when the merits of his invention are made clear.

The brick is intended chiefly for the outside walls of buildings, and is calculated to give immense strength while securing that every joint shall be absolutely waterproof. On all the wall sides are grooves and tongues which ensure the most perfect rigidity, and closing so uniformly to each other will not allow an entrance to wind or rain, while the strength thus secured should prove their serviceability in the erection of banking premises, strong rooms and similar situations. Stretchers, headers, corners and reveals are all similarly grooved and tongued, Mr. Smith having worked out his idea in a most complete manner.

We understand that models of these bricks have been submitted to many of the leading architects in London, who have expressed their admiration of the ingenuity with which the plan has been developed, and have declared their satisfaction with its practicability.

Stone Bricks.

WE understand it is intended to apply the principle of Mr. Smith's patent to compressed sand forming stone blocks, so that ordinary outside walls may be made with perfect watertight joints. These blocks will be secured on all four sides with tongue and groove like the bricks, and will secure an ideally strong wall.

Bricks and Fires.

MESSRS. A. RUTTER, G. H. Dean, G. E. Wragge, H. Packham and E. W. Goodenough have, on behalf of the Kent and Essex Brickmakers' Association, signed a report giving the result of their examination of the effects of the recent Cripple-gate fire on the various materials in the houses destroyed. The conclusion to which they have come is that the stock bricks, although not of the best quality, were quite unaffected—owing to the fact that stocks, from the large amount of silver in the brick-earth from which they are made and from the mode of manufacture are of the nature of a fire brick. Bricks made purely of clay, and especially when made by machinery, were not so well able to resist the action of fire. Their statement as to the condition of the various materials employed is as follows:—1. Ordinary stock building bricks, quite uninjured. 2. Perforated bricks, broken to pieces, and where they were used for outside facing the front face was gone, and the perforations exposed. 3. Blue bricks, faces gone. 4. Red bricks, faces gone and destroyed. 5. Stone, cracked and destroyed. 6. Iron girders, mostly twisted and curled up. 7. Wooden beams, charred, but practically otherwise uninjured. 8. Match-boarding used for panelling the walls, burnt to tinder.

THE Vestry of St. John, Hampstead, has accepted tenders for the ensuing year as

follows:—Hand-broken Narborough and Enderby granite and siftings, B. Nowell & Co., Warwick Road, Kensington; hand-broken Hartshill granite and siftings, C. Abell, Hartshill Granite Quarries, near Atherstone; bricks, Wakeley Bros. & Co., Ltd., Honduras Wharf, 74, Bankside, S.E.; country-made drain pipes, &c., Sutton & Co., Overseal, near Ashby-de-la-Zouch; town-made drain pipes, &c., H. Tugby & Co., Canal Potteries, Old Kent Road, S.E.

DAMP-PROOF WALLS.

WE have received from Mr. William Briggs, of Dundee, a copy of a pamphlet setting forth the good qualities of his "Tenax" building rock composition—the use of which is increasing throughout Great Britain, particularly in the extreme south of England, where the proximity of the English Channel has already given it a good test. Certainly it can withstand the severe conditions there imposed, judging from the success with which it has been applied elsewhere. Mr. Briggs claims that his composition is not only damp and vermin-proof and a non-conductor of heat and sound, but also that it strengthens the wall. In fact, he says that a wall built two half bricks on the flat, with "Tenax" run in, is as strong as an 18 in. wall built in the usual way. This point must be remembered when motives of economy have to be considered.

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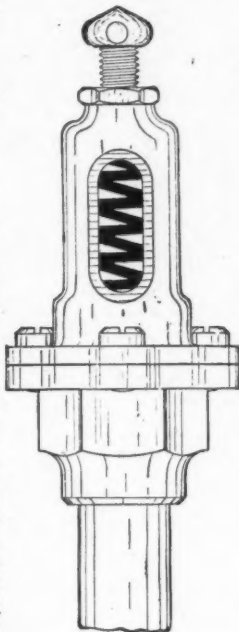
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VOL. II. of "ARCHITECTURE"

Has similarly noteworthy contributions on the

Cathedrals of Canterbury, Hereford and Gloucester and St. Albans Abbey

(See page 8).

"ARCHITECTURE" for JANUARY

Had profusely illustrated articles on

Melrose Abbey and The late Sir Henry Doulton.

THE FEBRUARY NUMBER

Commenced the article on

Ely Cathedral.

Concluded in the present issue. This, the *Cambridge Express* said, was "illustrated by the most complete set of photographs and drawings we have seen in any publication."

(For contents of March No. see page 8.)



The New Brick.

LAST month we briefly mentioned the fact that a new brick was about to be introduced upon the market. We may now say that the patentee is an Ilkley architect, Mr. Fred S. Smith, who has given his idea the name of "the perfect brick"—a title that does not seem too presumptuous when the merits of his invention are made clear.

The brick is intended chiefly for the outside walls of buildings, and is calculated to give immense strength while securing that every joint shall be absolutely waterproof. On all the wall sides are grooves and tongues which ensure the most perfect rigidity, and closing so uniformly to each other will not allow an entrance to wind or rain, while the strength thus secured should prove their serviceability in the erection of banking premises, strong rooms and similar situations. Stretchers, headers, corners and reveals are all similarly grooved and tongued, Mr. Smith having worked out his idea in a most complete manner.

We understand that models of these bricks have been submitted to many of the leading architects in London, who have expressed their admiration of the ingenuity with which the plan has been developed, and have declared their satisfaction with its practicability.

Stone Bricks.

We understand it is intended to apply the principle of Mr. Smith's patent to compressed sand forming stone blocks, so that ordinary outside walls may be made with perfect watertight joints. These blocks will be secured on all four sides with tongue and groove like the bricks, and will secure an ideally strong wall.

Bricks and Fires.

MESSRS. A. RUTTER, G. H. Dean, G. E. Wragge, H. Packham and E. W. Goodenough have, on behalf of the Kent and Essex Brickmakers' Association, signed a report giving the result of their examination of the effects of the recent Cripple-gate fire on the various materials in the houses destroyed. The conclusion to which they have come is that the stock bricks, although not of the best quality, were quite unaffected—owing to the fact that stocks, from the large amount of silver in the brick-earth from which they are made and from the mode of manufacture are of the nature of a fire brick. Bricks made purely of clay, and especially when made by machinery, were not so well able to resist the action of fire. Their statement as to the condition of the various materials employed is as follows:—1. Ordinary stock building bricks, quite uninjured. 2. Perforated bricks, broken to pieces, and where they were used for outside facing the front face was gone, and the perforations exposed. 3. Blue bricks, faces gone. 4. Red bricks, faces gone and destroyed. 5. Stone, cracked and destroyed. 6. Iron girders, mostly twisted and curled up. 7. Wooden beams, charred, but practically otherwise uninjured. 8. Match-boarding used for panelling the walls, burnt to tinder.

The Vestry of St. John, Hampstead, has accepted tenders for the ensuing year as

follows:—Hand-broken Narborough and Enderby granite and siftings, B. Nowell & Co., Warwick Road, Kensington; hand-broken Hartshill granite and siftings, C. Abell, Hartshill Granite Quarries, near Atherstone; bricks, Wakeley Bros. & Co., Ltd., Honduras Wharf, 74, Bankside, S.E.; country-made drain pipes, &c., Sutton & Co., Overseal, near Ashby-de-la-Zouch; town-made drain pipes, &c., H. Tugby & Co., Canal Potteries, Old Kent Road, S.E.

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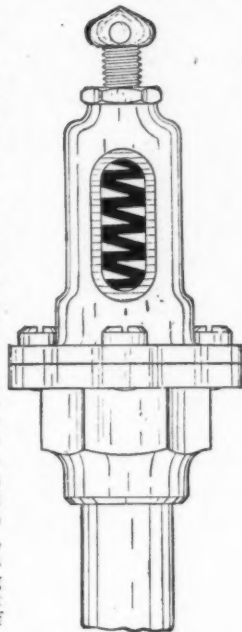
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BUILDERS AND BUILDINGS.

Portsmouth.—Mr. J. H. Corke, J.P., has been elected chairman of the Portsmouth Master Builders' Association, with Mr. A. E. Porter vice-chairman, Mr. C. Harding treasurer, Mr. F. Simpson secretary, and Messrs. J. Cockerell, C. Dye, W. W. Evans, H. Jones, W. Light, J. W. Perkins, and C. Reading on the committee.

Halifax.—The Halifax Building Trades' Exchange has had a most successful inaugural dinner under the presidency of Mr. Councillor Naylor. In responding to the toast of the town and trade, Alderman Gaukroger said he had been connected with the building trade as a brickmaker for a quarter of a century, and was delighted that all the firms had been amalgamated into one Halifax Brick Company, with the prospect of increased prosperity. It has been decided to make Wednesday the market day of the Exchange.

Bradford.—The membership of the Bradford Building Trades and Stone Exchange is now 569. In July it completes the first year of its existence, under the presidency of Mr. Ellis Robinson.

Worthing.—Messrs. Frank Sandell & Sons have completed the erection of the Capital and Counties Bank at Worthing, from the designs of Mr. R. Singer, architect, of Worthing. Messrs. Mainzer & Co. supplied the marble mosaic pavement, Messrs. Hardman, Powell & Co. the brass and ironwork, Messrs. Chubb and the Ratner Safe Company the strong room fittings, and Messrs. Mark Fawcett & Co. the fireproof flooring.

Kensington.—During the past year some extensive alterations have been made at the Royal Palace Hotel, Kensington, which now possesses the largest ball-room in London. Messrs. Legg & Son were the architects. Some costly Japanese papers were supplied by Messrs. Charles Knowles & Co. Messrs. Archibald Smith & Stevens supplied the lifts, the Coalbrookdale Company the grates and entrance porch, Messrs. Jeffrey & Co. the leather papers, and Messrs. Graham and Banks, whose new catalogue was recently referred to in our columns, were responsible for the decorations.

Wakefield.—Last month we recorded the progress of the federation idea among the master builders of the country. Now we hear that the Wakefield firms have decided to form an association, with Mr. J. Bagnall, of Eastmoor, as president, and Messrs. E. A. Elvey, of Belle Vue, and H. Fallas, of Horbury, as vice-presidents.

Liverpool.—Nearly all the principal building firms in the Liverpool and Man-

chester district were represented at a meeting recently held in the former place, when a strong federation was formed, with Mr. Robert Neill, jun., J.P., as president.

Warrington.—Messrs. Homan & Rodgers' system of fireproof flooring has been adopted in the new workhouse and infirmary at Warrington, the erection of which is being commenced by Mr. C. W. Downport, of Stockton Heath, from the designs of Messrs. William & S. Owen, of Warrington. The new building will have accommodation for 200 beds, and all the wards will be heated by open fireplaces or central open fire Musgrave stoves. In every case, however, the heating will be augmented by hot-water pipes or radiators.

Alloa, N.B.—Mr. A. P. Forrester Paton's mansion at Alloa is now completed and presents a fine example of the English Renaissance style with its square tower rising to a height of 55 feet. Messrs. Sydney Mitchell & Wilson, of Edinburgh, were the architects.

Stonehaven.—A fine granite house in the Scottish Baronial style has been built here from the designs of Mr. J. Augustus Souttar, of Aberdeen. The south and west elevations are in Kemnay granite, and the roof is covered with Tilberthwaite green slates. The interior work is chiefly in American poplar with the exception of the staircase, for which pitch pine has been used.

ARCHITECTURAL SOCIETIES.

Cardiff.—The annual dinner of the Cardiff, South Wales and Monmouthshire Architects' Society has been revived after a lapse of three years. Mr. C. B. Fowler, F.R.I.B.A., presided, and Professor Aitchison responded to the toast of the evening. Mr. Edwin Seward, F.R.I.B.A., submitted the toast of the Master Builders, to which their president, Mr. J. E. Turner, replied.

Leeds.—The following officers have been appointed in connection with the Leeds and Yorkshire Architectural Society to the various offices:—President, Mr. George Corson; vice-presidents, Mr. John Tweedale and Mr. T. Butler Wilson; hon. treasurer, Mr. W. H. Thorp; hon. librarian, Mr. W. H. Bevers; hon. secretary, Mr. F. W. Bedford; members of council, Messrs. W. S. Braithwaite, W. A. Hobson, G. Atkinson, A. France, C. B. Howdill, and A. E. Kirk; auditors, Messrs. H. S. Chorley and W. Pott.

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THE EDITOR OF
ARCHITECTURE SUPPLEMENT,
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Architecture

may be had, bound in black morocco, cut and gilt top, lettered in gold, at 15s. 6d.; carriage 6d. extra.

560 pages. 619 Illustrations.

BUSINESS CHANGES.

Limited Liability Company.

Messrs. HIGGS & HILL, builders, of Crown Works, South Lambeth Road, S.E., have converted their business into a private limited company. No change will be made in the management.

Partnership Changes.

Messrs. HANSON & BOOTH, surveyors and valuers, 35, Church Street, St. Helen's, have admitted Mr. R. BRUCE DAVIDSON, who has been with the firm ten years, into partnership.

Removals.

Mr. HERBERT IBBERSON, architect, has removed from Adelaide Place, E.C., to 28, Martin's Lane, Cannon Street, E.C. As announced on another page Messrs. T. & R. BOOTE's London office is now located at the Birkbeck Bank Chambers, Southampton Buildings, E.C.

Mr. T. PHILLIPS FIGGIS has removed from Adelaide Place to 28, Martin's Lane, Cannon Street, E.C.

Mr. OWEN W. DAVIS has left Bedford Square for 27, Rutland Street, Hampstead Road, N.W.

Transfer.

We understand that the lacquer, staining and varnishing departments of Messrs. WINFIELD'S, LTD., have been sold to Messrs. EVANS & JACKSON, by whom they will be continued.

MR. W. CHURCH HOWGATE announces special courses for the R.I.B.A. examinations to commence on the 22nd and the 29th inst.

PAINTERS' RISKS.—The recent fall of a painter while painting the front of a house in the west-end of London impresses upon decorators and others the necessity of obtaining the best contrivances for the use of their men. The use of Palmer's travelling cradle by painters generally would undoubtedly do much to lessen the likelihood of such accidents, and we would commend its adoption in the building trade generally.

PAINTS FOR THE TROPICS.—In his paper on "Building in St. Lucia," referred to on the first page, Mr. J. T. Rea says that Messrs. R. Gay & Co.'s "Impenetrable" paint has been extensively used in St. Lucia, having the advantage of being sent out ready mixed for use. Carson's "anti-corrosion" paint has been recommended as the best for tropical use, as it stands the extremes of heat without peeling or blistering. It may be remembered that in our November Supplement we published an important interview on the subject of the sale of paints and colours to our colonies generally—in view of the determined character of foreign competition.

Architecture. VOLUME II.

Contains Exhaustive Articles on

French Architecture. 109 Illustrations.

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Architecture No. 26.

Principal contents:

ELY CATHEDRAL.

By the EDITOR. 7 Illustrations.

ARCHITECTURE ON THE MOSELLE.

By W. HENRY BROWN.

MR. ALFRED BEIT'S HOUSE.

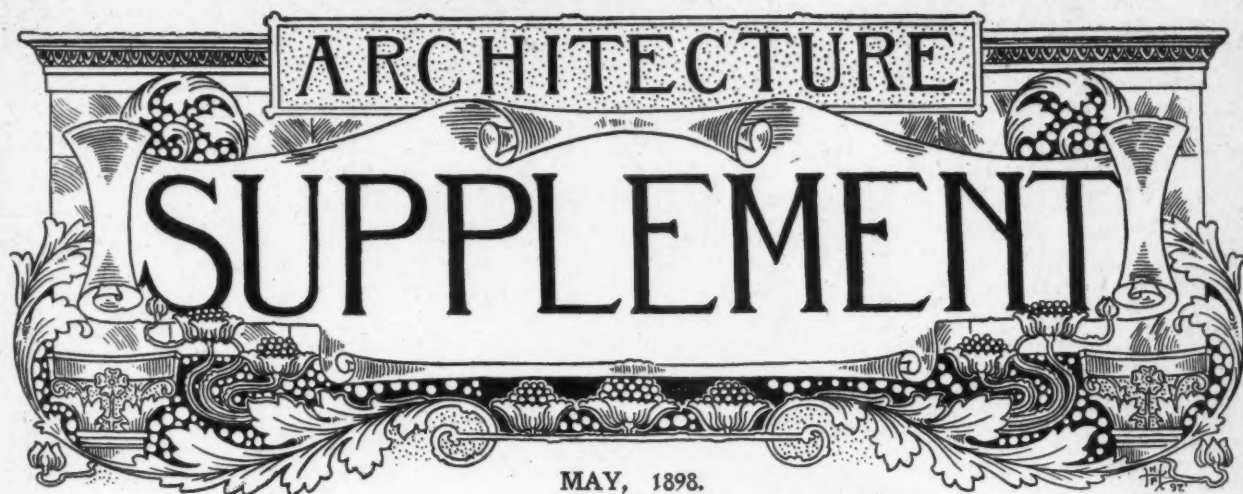
POEMS IN MARBLE. FAIRFORD CHURCH.

WESTON-ZOYLAND—AN IMPRESSION.

Publishing Office of "Architecture," Talbot House, Arundel Street, Strand, W.C.

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Technical Supplement—Gratis with "Architecture."



Architecture Supplement. NOTES OF THE MONTH.

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Publishing Offices: Talbot House, Arundel St., W.C.

Forthcoming Events.

MAY.

- 2.—R.I.B.A. Annual General Meeting.
Annual Meeting of the Liverpool Architectural Society. Closing Address by the President, Mr. W. E. Willisk, M.A., A.R.I.B.A.
- 5 & 6.—Annual Meeting of the Iron and Steel Institute at the Institution of Civil Engineers, Great College Street, Westminster, S.W.
- 6.—A.A. Mr. W. Eckstein, C.E., on "Interior Lighting, Reflected Light, &c." Mr. Tom Ekin, A.M.I.C.E., on "Electric Lighting as applied to Architecture."

JUNE.

- 20.—R.I.B.A., Presentation of the Royal Gold Medal.

JULY.

- 19—26.—The Annual Meeting of the Royal Archaeological Institute at Lancaster.

AUGUST.

- 30 & 31 and Sept. 1 & 2.—Annual Meeting of the Somerset Archaeological Society at Taunton.
- 18—25.—Congress of the Royal Institute of Public Health at Dublin.
- 26 & 27.—Autumn Meeting of the Iron and Steel Institute at Stockholm.

"Architecture" for May

Contains Articles on

Wells Cathedral;
Shooter's Hill House, Pangbourne;
The Northampton Institute, Clerkenwell;
Mr. Walter Crane's "Bases of Design."

Cathedrals of the World.

The present volume of ARCHITECTURE will possess unusual interest in consequence of the splendid series of articles on Abbeys and Cathedrals of the world. Melrose Abbey and Ely Cathedral having been most fully illustrated and described, Wells Cathedral is similarly dealt with in the current number—several splendid sketches accompanying a selection of photographs specially taken for ARCHITECTURE.

New Scotland Yard.

The attack made by Parliamentarians of political repute, upon Mr. Norman Shaw's building for the police headquarters on the Thames Embankment has been repelled by thirty artists and architects. Messrs. Arthur Blomfield, A.R.A., John Belcher, Philip Webb, Ernest George, J. T. Micklethwaite, Basil Champneys, and others have written to the papers saying that of the public buildings erected in the metropolis during the present generation, "it is the one of which London may be most justly proud." We are not surprised that the strictures of Sir Wm. Harcourt and Mr. Akers Douglas should have called forth such a strong protest, for although there may be inaccuracies in the design of the roof, and although the granite base might have been divided from the superstructure by a string, the fact remains, as was stated in the very first number of ARCHITECTURE, "it is a building quite above the cavil of its judges." Not only is it a fine building, but it has proved itself well adapted to the peculiar requirements of the police, and a building that so admirably answers the purpose for which it was designed deserves consideration apart from the excellence of its architecture. Would that all Government Departments were so well housed and conveniently arranged as the custodians of law and order at new Scotland Yard.

Bow Church.

East London has lost so many of its ancient beauties within the last decade, that we welcome the proposed restoration of Bow Church—as a pleasant alternative to demolition. The Church was erected in the fourteenth century, and its tower is a conspicuous object on the high road to the eastern suburbs. Plans for the restoration have been prepared by Messrs. W. A. Hills & Son, and Sir Arthur Blomfield has consented to superintend their execution, every assurance having been given that the restoration shall be of a very conservative character. Standing in the middle of Bow Road, and over-

shadowing Mr. Bruce Joy's notable statue of Mr. Gladstone, the Church should be allowed to remain as it has been these five hundred years, and we shall watch the progress of the work with careful attention, remembering that within five minutes' walk of the Church stood King James's palace, recently demolished, whose artistic interior decorations were sent to the woodyard heedless of interest and value.

Exhibition at Prague.

"The comity of the architectural and technological exhibition of Prague" inform us that their display will be opened on June 1st, and that a "peculiarly extent" section will be reserved for a reading room, the organisation of which has been entrusted to a certain firm. In their circular asking for our co-operation, the organisers say that the literary section will "consist not only of works purely architectonic, but of all works dealing with connexe arts." It will certainly be of general interest to know that "the reading room will be comfortably got up, the entrance of which will be free of charge, a novelty which will certainly be welcomed in our City."

The Northampton Institute.

In the current number of ARCHITECTURE is an article on the new Technical Institute in Clerkenwell. This was erected from the design of Mr. E. W. Mountford, by Mr. Walter Wallis, of Balham; Messrs. Rendle & Co. were responsible for the glazing of the swimming bath; Mr. Gilbert Seale for the execution of the panels of the ceiling of the large hall, and Messrs. Moreland & Son supplied the steel roof, with a span of 67 ft. The Ratner fireproof doors are used throughout the building, and in the boiler house Messrs. Babcock & Wilcox's boilers are the main features, a 100 h.-p. Willans & Robinson high-speed engine coupled to a 63 Kilowatt dynamo being used for lighting the building and supplying power to the various workshops.

Death of a Contractor.

Mr. John Thompson, who died at his residence at Peterborough on Easter Monday morning, was no ordinary contractor. Originally a sub-contractor to Mr. Ruddle, he became a general contractor, and did a good deal of work for Sir Gilbert Scott in connection with the Cathedrals at Hereford, Peterborough, Chester and Ripon, and other ecclesiastical buildings. Then under Mr. J. Oldrid Scott several important contracts were executed by him, notably the excellent repair work at St. John's Gateway, Clerkenwell. Mr. Thompson found time for public life in his native city, and had been Mayor

of Peterborough four times, his workshops giving the place the importance of a large building centre.

Deptford Baths.

The fine baths and washhouses for the people of Deptford are now open, and we may congratulate Mr. Thomas Dinwiddy upon the result. The bath has a water space with a capacity for 120,000 gallons, and dressing-rooms for 67 bathers, the walls being faced with glazed bricks, with blue brick moulded cornices and dressings. The first-class bath has an end window in faience and Portland stone. For the roof of the building Welsh rag slating, from Port Dinorwic, has been used. Messrs. Joel & Co. carried out the electric light installation at a contract sum of £1,897. This includes a 35 horse-power vertical engine and duplicate dynamos, one being an auxiliary, driven from the well engine when not required for driving the pumps. Mr. Holloway was the builder, the cost being £33,000, which included the engineers' sub-contracts, carried out by Messrs. Moorwood, Sons & Co., of Sheffield and London.

Fever Hospital Structure.

The members of the Edinburgh Architectural Association have had an address from Bailie Pollard, of the Public Health Committee, on "Fever Hospital Structure." He differed from Dr. Thorne, of the Local Government Board, who suggests hospital accommodation for one per 1,000 of the inhabitants, remarking that the experience of Edinburgh shewed the necessity for provision being made for one in every 600. As a material for hospitals, stone was preferred in Scotland, and the new City Hospital at Colinton Mains was instanced as a completely efficient modern hospital. A series of views from the plans prepared by Mr. Robert Morham, the City Architect, was shewn.

City Buildings.

A fine building in the Renaissance style is to be erected in Moorfields, E.C., by Messrs. Patman & Fotheringham. It will have a frontage to Moorfields of 96 feet, and return frontages to White Street of 137 feet and to Tenter Street of 74 feet. There will be a splendid entrance doorway, with a stone canopy supported by caryatides. Throughout the premises (which are being built for Messrs. Raphael Tuck & Co.) electricity will be used, and asbestos plaster will be used on the ceilings and walls. Mr. W. Hilton Nash is the architect, with Mr. Delissa Joseph as the consulting architect.

Fire-Resisting Decorations.

Now that the spring cleaning operations afford such a convenient opportunity for the substitution of new and improved decorative materials in place of those which have hitherto done service, the arrival of a little booklet dealing with the exhibition of fire-resisting decorations at the St. James's Hall, Piccadilly, W., last year, comes very opportunely. The word "Salamander" finds frequent mention in its pages, and we notice several illustrations of some very choice coverings for walls and ceilings made from asbestos. In a recent issue we illustrated some of the styles in which these are produced, and subsequent acquaintance with their excellences has only confirmed the high opinion we had already formed of their merits.

The Westminster Scheme.

By 336 votes to 84 the House of Commons has silenced, for the nonce, the attempt to Americanise a part of Westminster facing the Thames, and those who have any regard for the beauty of London will agree that

our legislators did a wise thing. Doubtless the Embankment from the Victoria Tower Gardens should be extended to Lambeth Bridge, and this an enterprising syndicate sought Parliamentary powers to do; but M.P.'s were averse to the erection of tall flats to frown down upon the river from heights of eight or nine storeys. The improvement has been brought nearer, however, by the action of the financial gentlemen, and public bodies will have to be more alive to the necessity of the work. With the contemplated alterations at the Westminster end of Parliament Street there ought to be an equally energetic attempt made to brighten the area to the west of the Houses of Parliament.

Employers' Federation.

There can be no doubt that the employers in the building trades have lately shewn the desire to federate for mutual helpfulness with an unanimity which will cause some of the men's unions to consider before they strike in future. The report of a meeting at Manchester, which we publish in another column, should be read by readers in the Midlands and the south, for it proves how determinedly those in the north have taken up the idea. Soon the National Association will be a great power which the men will have to reckon with, and greater steadiness should result in the Labour World.

Cold Water Paint.

Many cold water paints have lately been before the trade, and now we have to welcome another in Magnite—a paint intended for the exterior decoration of public buildings, hospitals, asylums, private residences, &c. The preparation is in the form of a powder, and cold water is added gradually until a paste is made. Then it is thinned down to the required consistency and ready for use. Where it is liable to come into contact with moisture it will be found serviceable for interior work. Besides having the advantage of a greater covering capacity than oil paint, it is very reflective, thus adding to its usefulness in basements, cellars and factories. The makers of Magnite are also introducing Petrol—for use on plaster. This can be mixed with either hot or cold water, and gives an extremely hard surface and one that resists water to a great extent. Both Magnite and Petrol have been prepared in a wide range of colours, and will doubtless come well to the front during the next few months.

Figured Glass.

Our advertisement pages have lately contained illustrations of some excellent figured rolled glass, made by a patent process at the glass works of Messrs. Chance Bros. & Co., Ltd., near Birmingham. This is well suited for door panels, window screens, and the like, its bright appearance giving a particularly good effect. The white glass can be obtained in any sizes up to 90 inches long and 36 inches wide, the standard width of the tinted patterns being 28 inches, although the length is the same as the white. We understand the usual thickness is about one-eighth of an inch, but other thicknesses can be made for special work. In addition to their figured glass, Messrs. Chance manufacture rolled cathedral glass on a large scale, as well as muffled glass—both in a great variety of tints.

New Showrooms.

During the month Messrs. Doulton, of Lambeth, removed their Manchester depot to Temple Chambers, St. James's Square, Manchester. At this address commodious showrooms have been opened for the display of their manufactures in pottery, sanitary goods, &c. There is a fine display

of glazed faience fire-places, shewing a variety of beautiful designs and colours. This is a particularly pleasing section of the department, and one in which Manchester people will doubtless find much of interest. Amongst the sanitary fittings is a fine display of baths of the most modern style of design, including vitreous enamelled baths, lavatories of every kind and form, &c. This new showroom has been rendered an imperative necessity, owing to the large increase in the Lancashire demand for Messrs. Doulton's productions. Readers may remember a fully illustrated account of the life and work of the founder of the firm appeared in the January number of ARCHITECTURE.

New Wall Papers.

The publication of Mr. Walter Crane's new book on Design gives more than ordinary interest to a new staircase paper called the "National," which he has just designed. In this he seeks to symbolize the unity of the kingdom, at the same time giving full play to the characteristics of the three countries of which it is composed. The three knights, St. George, St. Andrew, and St. Patrick, are placed in circles, which with a fourth, bearing an escutcheon filled with the regal bearings of the Royal Standard, form flowers upon a connecting and supporting scroll-like stem. This stem alternately blossoms with the rose, the thistle and the shamrock, producing by its main curve an ogee enclosure, which unites and balances the elements of the design.

Art Metal Exhibition.

From all we can learn, there will be a fairly large number of representative firms at the forthcoming Art Metal Exhibition in London, including houses of such repute as Messrs. Strode & Co., the Coalbrookdale Co., Thomas Elsley, Messrs. Keeling, Teale & Co., Messrs. Longden & Co., Messrs. Starkie, Gardner & Co., and Messrs. Verity Bros. A large number of prominent men have joined the council, and the loan section will be of great interest.

BUILDERS' ASSOCIATION.

Rochdale.—The annual meeting of the Rochdale Master Builders' Association was held at the secretary's offices, 100, Yorkshire Street, Rochdale, recently, when the following officers were elected for the year:—President, Mr. Thomas Wilkinson; vice-president, Mr. Frank Nichol; treasurer, Mr. John Coates; committee, Messrs. William Peters, William Ashworth, Thomas Turner, James Healey, Thomas Taylor, R. Robinson, Robert Woolfenden, and W. H. Pickard. Mr. Wm. Peters was elected representative on the United Federation of Lancashire and Cheshire Building Trade Employers; and Messrs. Wilkinson, Nichol, and Robinson representatives to the quarterly meetings of that body. Mr. W. Shepherd was re-elected Secretary.

AMERICAN SLATES.—In the annual special number of *Timber*—a very finely produced edition—appears some capital illustrations and equally creditable letterpress concerning the slate trade of the United States.

MESSRS. J. DUCKETT & SON, LTD., of Burnley, will supply the earthenware pipes required by the Colne Corporation during the ensuing year. Messrs. J. Cameron Swan & Partners have secured the contract for cement.

The Sculptor is the title of a new monthly journal for those coming within the scope of its name. The first number contained an interesting sketch of Professor Carlo Nicoli, whose statue of the Queen at Brighton has revealed the fact that his talents are of a high order.



FOLDING PARTITIONS.

IMPROVEMENTS in scholastic education have completely altered the planning of school buildings—if the older rooms in which the young were trained can be said to have been planned at all. Nowadays no really efficient school is without class-rooms which can be divided to suit the attendance and so enable the teacher to pursue his work in the most convenient way. What is the best method of dividing large areas into smaller spaces by partitions? That is a subject which was once vehemently debated by all school managers, but which is being rapidly settled since the introduction of a form of folding partition by a Manchester firm—Messrs. Peace & Norquoy.

In this useful partition (which we should not have noticed in these columns were we doubtful of its value) pivotted sections are hinged together and carried on pulleys in such a way that they can be quickly run along their grooves and adjusted without any

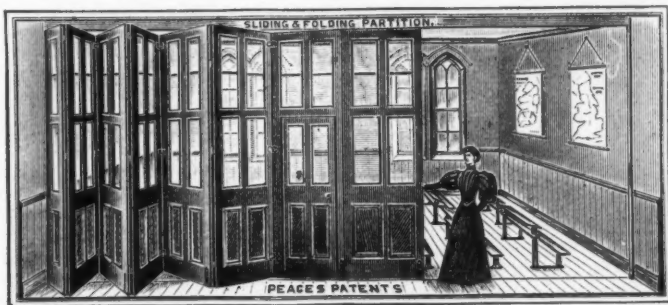
"WILLESDEN UNDER-SLATING."

THE productions of the Willesden Paper and Canvas Works are well known as reliable in quality and as having won a reputation the makers are most anxious to retain. Their Willesden Underslating deserves a special word when we consider the recent rough weather experienced in many parts of the country. This is really the Willesden 2-fly paper, which is thoroughly waterproof, has no smell, is a non-conductor, lies very close on the roof and does not perish when confined beneath slates or tiles. It is supplied in continuous lengths 60 inches wide, and is laid across the open rafters and well overlapped at the joints. In consequence of its absolutely waterproof nature, roofs lined with Willesden paper are secure from the penetration of rain or snow. In fact, the paper really acts as a second or under roof should the slates become displaced. We note that it is not claimed on behalf of the Willesden 2-fly paper that it is fireproof, but stress is laid upon the well-substantiated fact that it will not readily burn, thus being safer in use than felt. This underslating has stood the test of usage and is now rendering good service at the Church House, the Royal College of Music, and other well known buildings in London, as

firmness, prevents draughts, and is proof against dust. Being loosely hung, the sashes can be taken out of the frame with ease for the removal of furniture, &c., while by the use of special friction pivots each sash can be regulated and securely fastened at any required angle. The inventor, Mr. H. C. Webb, points out that the construction of his reversible window sash is extremely simple and the fewness of the working parts is a great feature which should secure its adoption in many places. Certainly the idea seems a good one, and we shall be pleased to hear of its adoption in some large public building where liability to accidents under the existing arrangement is frequent.

ROOFING.

OUR attention has recently been called to the notable roofing works carried out by an Irish firm, and continuing enquiries we have been shewn photographs of some really excellent work done by them. The firm referred to is Messrs. M'Tear & Co., of Belfast, and their speciality is felt roofs. Their works at Belfast are of considerable extent, comprising not only the departments for preparing their felt, but also the sawing, planing and moulding mills, where the woodwork for their circular felt roofs is made. This particular kind of roof is constructed on the "bow and string" principle, and has proved its value in many places, the greatest test being that of the drill shed of the 31st Lancashire Rifles at Oldham. The area covered is 100 feet wide and 160 feet long, and being on the top of a hill the roof has been well exposed. It is claimed by the firm that the principle adopted in the construction of their roofs effects a great saving in the cost, especially in roofs of large span. The circular felt roof can be made up to 100 feet span without centre supports, and these and other advantages are clearly set forth in the firm's excellent catalogue. In a later issue we propose to illustrate some of the most notable roofs erected on this plan.



PEACE AND NORQUOY'S FOLDING PARTITIONS.

great effort. In schools where female teachers do not wish to incur the manual labour necessitated by some partitions in the market this form will be appreciated, since it runs so easily, and quickly responds to even the slightest pull. The grooves at the top and bottom are no novelty, but as the sections, instead of being disconnected, are hinged together, they can be folded, when not required to divide the apartment, in a similar way to the familiar lap screen, and so placed along the wall out of the way—an important advantage, indeed, seeing that no projecting obstruction can be seen.

Such is the principle; it is executed in excellent style, the panelling and fitting of the sections being particularly clean and effective, and not only are the partitions useful for schools, but in public buildings of every description where such divisions are ever required. They have been adopted in a variety of buildings, notable among which are the Richmond Technical Institute, the Western Hospital, Fulham, Epsom College, the Volunteer Drill Hall, Harrogate, the Church Institute, Sunderland, the Great Western Hotel, Swindon, and hundreds of schools throughout the country. Many leading architects have approved of Messrs. Peace and Norquoy's partitions, and among those who have specified them on important works are Messrs. Darbyshire and Smith, J. Gibbons Sankey, H. D. Searles Wood, Cole A. Adams, Sir Arthur Blomfield, A. E. Street, W. G. B. Lewis, J. M. Brydon, Aston Webb, &c., only to select a few at random from a list of two hundred names supplied to us.

well as at Hymer's College, Hull; the General Hospital, Birmingham; the Free Library at Bristol, and other important provincial buildings. Mr. John Thompson, the well-known church builder of Peterborough, whose death has just been announced, held a high opinion of the paper, writing a few months ago as follows:—"I have used your 2-fly paper frequently under slates and leads of church and other roofs, as a substitute for felt, and I think it is particularly suited for such a purpose."

WINDOW SASHES.

MANY attempts have been made to facilitate the cleaning of windows without the risks too frequently accompanying the ordinary methods in use. Few have proved satisfactory, and consequently every new idea is welcomed as a possible solution of the problem which has hitherto eluded the ingenuity of inventors. Hence we have regarded with interest a new reversible window sash lately brought out and embodying, it is claimed, a new departure. In this the sashes are pivotted and placed in the frame one immediately over the other in a direct line, instead of one behind the other, as in some windows we have seen. Consequently, the insides of the stiles of both sashes flush with themselves and with the frame, an arrangement which enables the employment of hinged and locking flies at the side of the frame, and so ensures perfect

PAISLEY ABBEY.—Dr. Rowand Anderson, of Edinburgh, has been examining the stability of the foundations throughout the choir of Paisley Abbey and is convinced of their satisfactory character. They consist of massive masonry 8 to 9 feet in depth. Other parts of the Abbey are to be restored, Dr. Anderson, who carried through the restoration of Dunblane Cathedral, being the architect employed.

EXPANDED METAL.—In connection with the discussions going on with reference to fireproof construction the merits of expanded metal have lately come well to the front—as they deserve to do. We would call attention to the three-eighth inch mesh for lathing and the three inch mesh as a tension bond for concrete work. In such a case the strands forming the meshes being at an angle to the plane of the sheet from which it is cut the plaster is dove-tailed in position and at the same time covers the upper side of the metal and protects it. We hear that the Expanded Metal Company has a special method for forming solid partitions two inches thick by means of interlacing the lathing in basket fashion under and over tension rods which, when covered with a hard setting plaster, forms a light rigid fire-resisting and practically sound proof partition. Partitions of this kind have been erected in the Savings' Bank Department of the Post Office—thus giving a kind of official approval of the method.

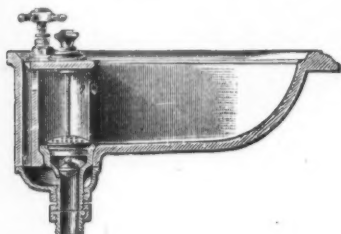
BIRMINGHAM is to have a new library, and the tender of Messrs. John Barnsley & Sons for the erection of the same has already been accepted. Messrs. Cossins, Peacock & Bewlay have prepared the designs, which give evidence of a very picturesque building. There will be accommodation for 200,000 volumes, and, as a "sign of the times," we would mention that a shed is to be fitted up for the storage of cycles—a new privilege accorded subscribers to the library.



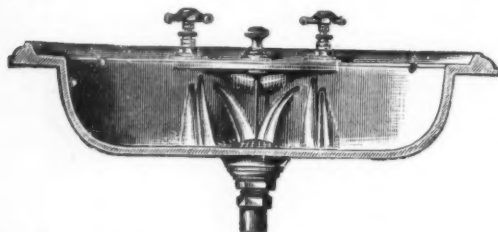
"MODERN" LAVATORY.

SOME time ago we referred to the sanitary specialities introduced by an eminent Scotch firm, and now have pleasure in drawing special attention to one that was only incidentally referred to on that occasion.

We write of the new patent "Modern" lavatory, intended to meet the demand for all fittings in connection with sanitary appliances being open and accessible. Not only has this been done in the pattern illustrated, but a neatness of appearance has also been combined with the more utilitarian principle. It will be seen from the longi-



tudinal and cross sections herewith, that the usual plug and chain has been avoided. At the back of the basin an open recess is made, over the top of which there is a porcelain projection, through which the waste-pull works. It is calculated that the "Modern" lavatory will discharge in less than half the time occupied by the style of basin ordinarily adopted. We should also mention that the outlet grating is very large, and, being fitted above the waste valve with a slotted arrangement, can be removed very easily for cleaning or inspection purposes. The lavatory is constructed with a view to carrying away the water from both taps running full bore with the waste valve shut. In the longitudinal section readers will observe the system adopted for bringing the water into the basin. Two small orifices send a little stream of water down the overflow in order to keep it always sweet and clean. Two

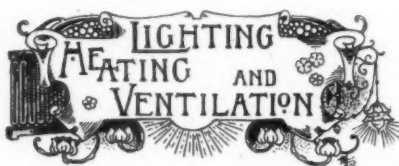


other jets impinge upon the grating, so that they may always be cleansed while the other perforations introduce the water direct to the basin. The taps are fitted into a special recess made for them in the basin, thus materially reducing the amount of brass work shewn in the lavatory. Altogether, the "Modern" lavatory deserves the attention of architects.

Sanitary Castings.

In the midst of a piece of charming rural scenery near Sheffield, are situated the Thorncliffe works of Messrs. Newton,

Chambers & Co., Ltd., where a great variety of goods are manufactured. Ranges and stoves form an important branch of their activities, a leading speciality being the "Solar" radiator for public halls and large mansions. Special attention, however, has been given to sanitary castings. Among these are some valuable features in manhole frames and covers, one being made with a side entrance frame and cover for the Metropolitan vestries. This has a lift-off cover, fitted handholes, air-tight cover and wrought-iron grid or door. There are other patterns fitted with air-tight covers to drop into water lute or sand joint, and fitted with either key holes or hand holes for lifting. Lamp hole frames and covers, tidal flaps, step irons, stench traps, gullies, street boxes, &c., cast-iron sinks, lavatory fittings, soil pipes and connections, &c., laundry fittings, &c., are also among the firm's manufactures.



Heating Horticultural Buildings.

In their catalogue of horticultural buildings, Messrs. Messenger & Co. make some useful remarks on the heating of such structures. They recommend a wrought-iron boiler of the saddle type as one combining the greatest advantages. Cast iron, although a better material for resisting the action of the water than wrought iron, is only advised for small boilers. But in complicated castings, such as some boilers are made up from, it is impossible always to secure the metal being of equal thickness throughout, and when such is not the case strains are set up which may result in the ultimate destruction of the boiler altogether. Owing to this risk of cracking, Messrs. Messenger & Co. only employ cast iron in their small size "Loughborough Boilers," where the danger is said not to exist. In their catalogue a large number of boilers which require setting in brickwork are shewn, and we may say that such give the best results. The brickwork being a non-conductor of heat, retains the heat long after the fire is out and so keeps the water hot. On the other hand, an independent boiler radiates a large amount of heat. Among the special boilers introduced by this firm is the Loughborough patent boiler, a most efficient means of heating small greenhouses. This boiler can be placed in the wall of the greenhouse, and is of such a height that the top pipe will readily pass under any ordinary stage, the upper part of the pipe being only about 2 ft. above the floor line. The boiler being let into the wall, is, with the exception of the front, virtually inside the greenhouse, with the result that the whole of the heat is utilised in heating the house—an advantage which should be borne in mind by readers who wish to find a satisfactory way of heating horticultural buildings of the smaller variety.

Mr. Grundy's System.

For more than two decades Mr. John Grundy has been devoting his attention to improvements in heating and ventilating public and private buildings. His system,

as perfected, presents some very important features, not the least important of which is the fact that the air does not become "de-vitalised," as is frequently the case with heating appliances less carefully planned. Just now, when the winter is passing, many people will find the systems they have introduced have proved faulty, and ere the cold comes again will probably have to set their house in order. For this reason we now merely mention that the system is in operation at Truro Cathedral; Stanley Cathedral, in the Falkland Islands; Christ Church Cathedral, Dublin; Brechin Cathedral, and a host of other buildings, a list of which Mr. Grundy will be pleased to supply on application to him at 30, Duncan Terrace, City Road, N.

Panel Inlet and Air Diffuser.

A combination of Kershaw's patent inlet and air diffuser and the Sheringham inlet has been made, in which the fresh air enters at an angle more approximating the vertical than was the case in the Sheringham. In this the radiating deflectors cut up and diffuse the air as it enters, and so prevent the draughts that must inevitably result when air enters in one large unbroken column. An advantage of this inlet is that it remains either open or closed without any balance weights. In addition to its undoubted advantages, the inlet can claim recommendation on account of its ornamental character, being made of strong cast iron and enamel painted, or, for special locations, it can be had finished in electro-bronze. There is little doubt that, when used in conjunction with what is known as Kershaw's patent pneumatic (exhaust) ventilator, a more efficient system of ventilation is secured.



LOCKS and lock furniture is always one of the troublesome problems, the solution of which can be materially assisted by an excellent catalogue such as that which Messrs. Colledge & Bridgen issue to the profession. This contains illustrations and prices of well-designed rim, dead, drawback, stock, mortise and other locks. A very useful type is No. 805—a mortise stable door lock. When the latch bolt of this lock is turned to open the door, it remains inside the lock, thus preventing any possibility of injury to horses passing through. It releases itself when the door is closed by means of a stud on the striking plate. In lock furniture we notice some illustrations of the "Stanley" and "Tudor" patterns, which have no screw in the neck of the knob. Messrs. Colledge & Bridgen are sole proprietors of the latter furniture, which in both brass or wood has received right appreciation. The catalogue also illustrates some of the firm's brass finger plates, in which geometric lines and natural features have been introduced with the evident desire to produce effects of an artistic character, as well as to meet the wants of a less particular public.

GRANOLITHIC.—Stuart's Granolithic stone, described in our columns last month, has just been selected for the paving of certain important Edinburgh footpaths.

AMERICAN ARCHITECTURE.

BEFORE the Royal Institute of British Architects, with Mr. H. L. Florence in the chair, Mr. A. N. Paterson read a paper the other evening on "Domestic Architecture in the Eastern States of America," a subject with which he made himself personally acquainted in 1896.

America, he said, had produced a type of house characteristic and original. From an artistic point of view, the best examples equalled, if they did not surpass, the highest standard of work in Great Britain; while, as regards convenience and comfort, the type was superior to that common in England, and one from which English architects might learn much. Having shewn that climatic conditions were responsible for the open type of plan characteristic of the American house, Mr. Paterson referred to a few of its more distinctive features—the cellar for the heating apparatus, which also had an important part in determining the scheme of drainage; the complete system of heating, reducing draughts to a minimum, allowing double doors of extra width to be wide open, and leading to the almost universal adoption of sliding doors; the effect of spaciousness, even in small houses, due to the large hall and open doors; the verandahs, which had greatly developed in suburban and country residences, and become a characteristic feature in plan and elevation; the bedroom "closets," or receptacles for wardrobes, chests of drawers, &c., the heating system rendering the bed-chamber available as a secondary and independent sitting-room or snuggery, folding beds being largely used; the service-rooms, a marked feature of the American plan, less isolated than in the English house.

Having referred to the different types of domestic architecture found in New York, Washington and Brooklyn, Mr. Paterson dealt with construction and materials, particularly the steel-framed construction, which was exercising such a pernicious influence on the architect's art, from the point of view of sound architecture. Practically many of the buildings were steel cages, sheathed with a constructional shell of granite, stone, brick or marble. Even the stone corbelling under the projecting oriel was a sham, the expense of stone being offered as an excuse. Window mullions, themselves probably formed of stone sheathing round a steel core, are carried by steel cantilevers bolted at the back into the girders of the floor below, and the correctly designed and jointed corbel courses with difficulty carry their own weight.

For roofs, floors and partitions, fireproof construction is now generally adopted in the domestic buildings of the cities of the Eastern States, and here we would leave Mr. Paterson's paper a moment to remark upon the great need of such construction in our own domestic architecture. Attention is being rightly given to the security of public buildings and city offices; but we are afraid little care is being taken with regard to the fireproof arrangements of the long terraces of houses which are being constructed in the suburbs of London and in the provinces. And yet, with a fireproof wall between such, or between every two or three, the danger of the spread of fire might be easily minimised.

Mr. Paterson informed his audience that, in the construction of flat roofs, an extensive use is now being made, in combination with other materials, of "roofing paper," or felt, laid in several thicknesses and bedded in tar. Most frequently the outer skin is of copper, laid either directly on the concrete or on wood and felt in sheets 12 inches by 24 inches, and with soldered joints. This, again, is a point upon which greater stress should be laid in this country. In a recent issue of

the SUPPLEMENT we made some very opportune remarks with regard to the use of copper for roofing purposes, and should like to have further evidence of its value in that connection. Certainly there is little cause to doubt its growing popularity and the greater recognition of its merits.

SAFES AND STRONG ROOMS.

THE many fires in important buildings, such as Spurgeon's Tabernacle, as well as the more commercial structures that were destroyed in the Cripple-gate holocaust, have led to clients questioning architects very closely as to the merits of strong rooms and their accessories. In these cases reliance has to be largely placed upon the reputation of the maker, and the necessity of going to a well-established firm like Messrs. Hobbs, Hart & Co., Ltd., cannot be too emphatically set forth. This particular house dates its origin from the great Exhibition of 1851—a fact which has probably influenced the managers in the steady and consistent way in which they have been represented at all succeeding displays of an international character. And at all these exhibitions their safes, locks and other devices calculated to thwart the designs of nefarious men have won distinction and brought new clients to their books.

A word with regard to their safes. In all cases their bodies are made on the firm's special "seamless" system, designed to ensure perfect rigidity, and render them able to withstand the effects of falling during fires or the violence of burglars. Sometimes a safe that will offer a fairly satisfactory resistance to the flames will be overcome and wrenched apart by the fall of a roof or the carrying away of the floor. Such is impossible with the "Seamless" system in which the backs, sides and door jambs are bent out of one continuous plate. Messrs. Hobbs & Co.'s double angles are attached, and everything done that is possible to attain the desired result.

A particularly good class of safe is the Progress G quality, intended to give perfect security to the most exposed positions for valuable property. The construction is entirely of steel and the firm's own solid welded steel-iron of a thickness of not less than 2 in. Over their entire surface they are uniformly drill and hammer-proof, and wherever attacked offer the same strength of resistance. Messrs. Hobbs & Co.'s patent interlacing angles and frame secure the doors, and there are planed horizontal sliding bolts, all working simultaneously and held in the locked position by various patented means of security. We may add that a large quantity of the jewellery and plate owned by the Royal Family is contained in safes made by this firm, where it is likely to ever remain invulnerable to burglar and resistive to fire.

In strong room doors exposed to exceptional risks, Messrs. Hobbs, Hart & Co., Ltd., have achieved renown, owing largely to the excellence of their steel vestibule linings, by which the entire thickness is embraced, thus preventing the possibility of the removal by violence of the door and frame. The inside of the vestibule is provided with wide steel flanges, similar to those on the outside. Every care is taken to prevent the piercing of the walls at the sides of the door frame.

In preventing the spread of fire the patent keyed-rebated party-wall doors have rendered signal service. They entirely comply with the Metropolitan Building Act, and will give protection in large fires where the danger is intensified by great wind pressure. Certain sliding doors are of a type specially intended for wharves and warehouses used

for the storage of inflammable materials, while others for special purposes can be made.

Besides large safes and strong rooms, Messrs. Hobbs, Hart & Co., Ltd., make, at their works in Islington, a great variety of locks of every kind and for every purpose, one important kind being specially suitable for securing overlapping sliding or pedestal doors. These are machine-made brass sliding door clutch bolt locks, which effectually attain their object. Another interesting speciality is a brass escutcheon lock, constructed to screw over keyholes for the purpose of adding exceptional security to locks in ordinary use. When the escutcheon is raised and locked, the screws and the keyhole are completely covered, thus preventing the secret and fraudulent use of the ordinary keys, or any copy of them.

The firm's general lock catalogue is a most comprehensive work, and in it several types of their protector locks are shewn. These combine the principles of lever security as a protection against the use of any but the true key. The movable slump security against picking, and the revolving security as a protection against fraud have also been introduced, these forming a triple combination which must be regarded as practically perfect.

BUILDING COMPOSITION.

DESPITE the many suggestions made during the last half century, and the scores of practical efforts that have been made to prevent dampness of walls, nothing like a uniform state of dryness has yet been brought about. The urgent need has induced many to attempt to supply the demand for a really perfect opponent of damp on walls, but we have yet to be shewn an ideal preparation for dealing with such conditions.

Lately our attention has been called—or rather recalled—to the "Hygeian Rock" building composition, which is claimed to be a powerful resistant of damp, while its adoption gives strength to walls and generally adds to their life. For the walls of swimming baths and similar situations, it is said to be practically unrivalled, although we fancy this is a claim urged on behalf of other things besides this particular composition. At the same time it must be acknowledged that various testimonials issued by the inventors give it a basis for loud praise. The preparation is of a bituminous character, sets quickly, and is certainly worthy of consideration by those who have not made themselves acquainted with its merits during the time it has been before the public.

BATH.—Messrs. C. Francis, Son & Co., of Newport, Isle of Wight, are to supply Portland cement to the Bath Urban Sanitary Authority.

CARLISLE.—The Corporation of Carlisle have contracted with Messrs. J. C. Johnson & Co., Limited, Gateshead-on-Tyne, and the Kingmoor Brick & Tile Co., near Carlisle, for the supply of cement and bricks respectively.

MESSRS. C. C. DUNKERLEY & Co., 66, Port Street, Dale Street, Manchester, will supply iron and steel work to the value of £511 for a new school in Salford.

ASTON MANOR (near Birmingham).—Messrs. J. Beddow & Sons, Sheffield Road, Walsall, will supply the Aston Manor Urban District Council with bricks during the current year.

THE ART GALLERY at Bury is to be heated and ventilated on Messrs. Sutcliffe & Co.'s low pressure plenum system.

THE ARCHITECTURAL ASSOCIATION's next spring visit will be to the Crown Theatre, Peckham, by permission of the architect, Mr. Ernest A. Runtz, on May 7th.

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Has similarly noteworthy contributions on the

*Cathedrals of Canterbury, Hereford
and Gloucester and*

St. Albans Abbey

(See page 8).

"ARCHITECTURE" for JANUARY

Had profusely illustrated articles on

*Melrose Abbey and
The late Sir Henry Doulton.*

THE FEBRUARY NUMBER

Commenced the article on

Ely Cathedral.

Concluded in the last issue. This, the *Cambridge Express* said, was "illustrated by the most complete set of photographs and drawings we have seen in any publication."

(For contents of No. 26 see page 8.)

**Glazed Bricks.**

We have received some samples of brown glazed bricks in various tints, which reflect considerable credit on the Nuneaton works of Messrs. Stanley Bros., Ltd., where they were manufactured. These are being largely used for dados in board schools, hospitals and other public buildings, not only because of their fine appearance and excellent quality, but because they are supplied at prices which enable them to compete with the salt glazed bricks produced in some other districts. Being perfectly true in shape they can be laid without joints, and the fact that they are thoroughly hard and capable of withstanding the most severe weather, renders them useful for outdoor work.

Messrs. Stanley Bros., Ltd., make a speciality of glazed bricks—in addition to their terra-cotta work—and they have recently been adopted by the Admiralty for the new naval barracks at Chatham, as well as for schools at Watford, Landport and Tottenham, and infirmaries, &c., at Glossop, Portsmouth, Northampton and Warwick. At St. Mark's Hospital, in the City Road, N., designed by Mr. Rowland Plumbe, F.R.I.B.A.—Messrs. Treasure & Son used their bricks, and numerous other examples might be mentioned. We would advise architects and others to keep the name of Stanley Bros., Ltd., in mind when really good glazed bricks are required. Especially for hospitals, infirmaries and workhouses would we recommend these specialities.

Bricks and Fire.

In the building of some of the warehouses destroyed in the recent Cripplegate fire, a quantity of white glazed bricks made by Messrs. Joseph Cliff and Sons were used. Some of these have been recovered from the ruins, and present an interesting tribute to their good quality. In many cases the glaze has melted, a result only possible with a heat that would fuse steel. But the bricks themselves are undamaged, thus proving the excellence of the manufacture.

Fluate.

We have received from the Bath Stone Firms, Ltd., a circular commendatory of "Fluate," for hardening and preserving stone, bricks, marble, tiles, terra cotta, &c. The preparation is a clear, colourless liquid, which, after application, leaves the grain of the stone as natural in appearance as before use. Not only does it prevent decay in new work and arrest disintegration in old, but it waterproofs porous brickwork and stone-work. Accompanying the claims of Fluate is a list of works which have been dealt with in 29 counties of England and Wales, thus giving an idea of the almost universal favour with which it has been received. Among the buildings thus treated are Buckingham Palace, Lambeth Palace, some portions of St. Paul's Cathedral and of Westminster Abbey, the Charterhouse, Selwyn College, Cambridge, and others of lesser repute.

ENCAUSTIC TILES.—In our next issue we shall publish an illustration of an interesting work which shows the perfection to which the manufacture of encaustic tiles has been brought.

**Export Business.**

During March the exports of cement fell below those of the corresponding month of last year, but were above those of March, 1896, the total being 33,860 tons, valued at £58,223. The British possessions in South Africa and in the East Indies continue the most steadily progressive buyers of British cement, their receipts being nearly one-half of the total exports. The Argentine Republic, too, has improved, and although the exports thereto for the three months to date are below those of the same period of 1897 we should not be surprised to see the improvement of last month maintained until the results are nearly equal at the end of the twelve months. Holland, the United States and Brazil shew a great falling off and manufacturers would do well to maintain their supremacy within our own Empire rather than seek to attend to other markets and neglect their own. Despite the statements of officials there is no doubt that British cement is holding its own in the East Indies and in South Africa, and with proper care the threatened competition of other nations need cause no alarm on the Medway—nor anywhere else.

SANITARY INSTITUTE CONGRESS.

THE annual congress of the Sanitary Institute will, this year, be held at Birmingham. The Lord Mayor, Councillor Beale, is chairman of the local general committee. A meeting has just been held at which the following officers were appointed:—Finance sub-committee (chairman, Councillor Johnstone), reception and hospitality (chairman, Councillor Godlee), excursions (chairman, Councillor Lancaster), literary and press (chairman, Alderman Cook), exhibition (Councillor Bisseker). The following gentlemen were appointed the local hon. secretaries of conferences and sections. Conferences:—Municipal representatives, Councillor J. H. Lloyd and Mr. E. V. Hiley; medical officers of health, Dr. Barwise and Mr. F. M. Bloomer; municipal and county engineers, Mr. H. Ashton Hill and Mr. A. D. Greatorex; sanitary inspectors, Mr. J. Parker and Mr. N. Deeks; domestic hygiene, Mrs. C. J. Bracey, Miss M. Jenkyn Brown, and Mrs. Sargent. Sections:—Sanitary and preventive medicine, Dr. H. Manley and Dr. T. S. Short; engineering and architecture, Mr. H. T. Buckland and Mr. S. R. Lowcock; chemistry, meteorology and geology, Professor Frankland and Professor Kaufmann. Mr. W. S. Pritchett was appointed the local secretary.

Sir Joseph Fayrer, Bart., has accepted the presidency of the congress, and judging from the practical character of the committees appointed, the Sanitary Institutes' meeting at Birmingham promises to be one of the most successful of the series.

HAMPSTEAD.—The new block of the Hampstead public baths, designed by Messrs. Spalding & Cross, has just been completed. Mr. T. Kinglerlee, of Oxford, was the builder, and the front of the building is in the English Renaissance style.

BUILDING TRADE FEDERATION.

At the annual general meeting of the general trades federated in the Building Trades Association of Manchester, Salford and District, Mr. George Macfarlane, vice-president, in the absence of Councillor W. Holland, J.P., president, occupied the chair. The Chairman, in his address, stated that the final arrangements had been made and officers elected, forming a federation of building trades employers for Lancashire and Cheshire. This combination of building trades employers embraced, along with Manchester and Liverpool, twenty-four of the largest towns in Lancashire and also some of the towns in Cheshire. The purpose of the federation is to unite all the local associations connected with the building trade throughout Lancashire and Cheshire, and promote and form builders' associations in towns and districts where they do not already exist. This plan of federating local associations with a county federation is part of a national scheme, whereby all England and Wales is first apportioned or divided into county districts, then into National Association centres.

A map has been prepared shewing fourteen county divisions; these again are combined into five national centres, the National Association of Master builders of Great Britain being the head, uniting all and giving guidance and assistance wherever required. Thus every town and every group of villages would have a masters association dealing with matters immediately connected with their own locality, the county division dealing with wider and more important issues, while the national centre would focus the power of all the constituent associations.

The National Association being, as it were, the hand that holds the reins, and through which all were represented. By this scheme a truly National Association will be formed that will have strength and weight to deal with any matters affecting the building trades.

The late engineers' strike has been an object lesson both to the workmen and masters. Its result will no doubt have a steady effect upon trade unions throughout the country, and may be the means of producing a less combative state of mind and a desire to use diplomacy in settling trade matters rather than "let loose the dogs of war." We have difficulties before us in two of the building trades. The carpenters and joiners have given notice for alterations to their working rules, which, if adopted, would seriously affect employers; we trust, however, that no conflict will result, and that some mutual concessions will overcome our present difference. The stonemasons have also sent in notice for another id. per hour, and rather drastic alterations to their working rules. Of course, workmen and employers look at the conditions of labour each from their own point of view, and from an employers' point of view I consider if such stringent working rules as the masons now wish to enforce were adopted by all the other trades in the country England would, in a few years, become a third-rate power.

Mr. Walter Marshall stonemason, in addressing the meeting, read the proposed new rules of the Manchester masons, com-

menting very strongly upon the unreasonableness of them and the impossibility of carrying out work either successfully or profitably under the restrictions that the men were trying to impose.

Mr. W. Higson, Jun., plasterer and painter, spoke of the great scarcity of plasterers, and the great difficulty on that account of getting work carried on properly, this scarcity being brought about entirely through the limitation of the number of apprentices allowed. They were only allowed three apprentices to each firm, however large a number of men the firm employed, the masters being worse off in the matter of apprentices than any other section of the building trade.

Mr. Henry Matthews, builder, spoke of the advantages likely to be gained by employers from the federation of employers just formed for Lancashire and Cheshire. The Lancashire Federation had been the pioneer of the other federations that were now being formed all over England, and Mr. Tomlinson, who had been appointed the secretary of the Lancashire and Cheshire Federation, had done splendid work in getting the master builders in the various towns of Lancashire together and forming associations where none already existed.

The necessity of having a builders' institute or building trade exchange was raised by some of the members, and the secretary, Mr. Fred Scott, was asked to communicate with those towns which had already formed such an institution for information as to their constitution and working.

MONUMENTAL BRASSES.

ACCORDING to the transactions of the Monumental Brass Society, the general notion that Norfolk is the county richest in brasses is erroneous, Kent possessing the largest number, viz., 327, Norfolk being third on the list with 232. Brasses, says the writer, are the most numerous round London and to the north and west of the Metropolis, the eastern counties coming next. In fact, we may divide the counties into natural groups. The first consists of the home and the eastern counties, and may be divided into four sub-groups dependent on position as well as on the distribution of brasses. The first sub-group contains Middlesex, Herts, Bedford, Buckingham and Oxford; next come the three counties nearest to London south of the Thames—Kent, Surrey and Berkshire; then the counties of Essex and Suffolk; and for the fourth sub-group, Norfolk, Cambridge and Northants, counties lying at some distance from London and on the outskirts of the main group. Taking the counties whose numbers in the list range from 10 to 30 we get a second group whose members form a complete semicircle round the first, but including also Derby and Cornwall. The third group, consisting of those counties whose numbers range from 30 to 50, consists of two divisions—Lincoln, Huntingdon and Rutland lying to the north-east of groups one and two; Dorset, Somerset and Devon on the south-west. Hereford must also be included in this group, owing its comparatively high position to the number of brasses in Hereford Cathedral. All the counties that follow lie beyond those mentioned, and the list ends with the three counties most distant from London—Northumberland, Cumberland and Westmoreland.

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BUILDING NEWS.

THE following are some of the most interesting contracts signed since our last issue. The Editor will be pleased to receive particulars of the progress of these works and intimation of important contracts to be given out within the next few weeks.

England..

KENNINGTON.—New Theatre. W. Wallis. £29,841. Mr. W. G. R. Sprague, Fitzalan House, Arundel Street, W.C., architect.

WOOD GREEN.—Rebuilding public house. H. Knight & Son. £13,166. Mr. G. E. Pinder, Bridge House, South Tottenham, N., architect.

MACCLESFIELD.—Restoration, Parish Church. J. Thompson, Peterborough. £13,482. Sir A. Blomfield, A.R.A., architect.

NOTTINGHAM.—New riverside road. A. Kellett, 41, John Dalton Street, Manchester. £20,750. Mr. A. Brown, city engineer. Mr. Kellett's tender was the lowest of seventeen received, of which only three came from Nottingham.

TAUNTON.—House and office. G. H. Pollard. £4,339. Messrs. Samson & Cottam, architects.

YORK.—Alterations and additions. Barry & Son. £3,987. Messrs. Inskipp & Mackenzie, 5, Bedford Row, W.C., architects.

DARTFORD.—Workhouse extension. Mr. Knight, Sidcup. £18,245. Mr. G. H. Tait, architect.

DUDLEY.—Theatre. J. H. Whittaker & Co. £10,750. Mr. A. Ramsell, architect.

MIDDLESBROUGH.—Additions to school. Bashman Bros. (recommended). £14,880. Mr. J. M. Bottomley, 28, Albert Road, Middlesbrough, architect.

SHEFFIELD.—School. A. Moore, 8, Wharncliffe Road. £8,972. Messrs. Hemsoll & Paterson, 18, Norfolk Row, Sheffield, architects.

WALSALL.—School. W. Wistance. £7,297. Messrs. Bailey & McConnal, Bridge Street, Walsall, architects.

BIRKENHEAD.—Schools. J. Merritt. £2,661. Mr. T. W. Cubbon, 54, Hamilton Street, Birkenhead, architect.

BRENTFORD.—Technical workshops. S. R. Lambie, 16, Rhyl Street, Kentish Town, N.W. £3,723. Mr. W. A. Finch, 76, Finsbury Pavement, E.C.

NEWTON ABBOT.—Workhouse alterations. F. A. Stacey. £3,339. Mr. Samuel Segar, Union Street, architect.

BIRMINGHAM.—Cottage homes at Erdington. Messrs. W. Lee & Son, Avenue Road, Aston. £42,721. Messrs. Franklin, Cross & Nichols, Union Chambers, Temple Row, Birmingham, architects.

Architecture

No. 28.

Principal contents:

ELY CATHEDRAL.

By the EDITOR. 7 Illustrations

ARCHITECTURE ON THE MOSELLE.

MR. ALFRED BEIT'S HOUSE.

POEMS IN MARBLE. FAIRFORD CHURCH.

WESTON-ZOYLAND—AN IMPRESSION.

Publishing Office of "Architecture," Talbot House, Arundel Street, Strand, W.C.

Printed for the Proprietors by HARMER & HARLEY, Ltd., and Published at Talbot House, Arundel Street, Strand, London. For the month of May, 1898.

BUSINESS CHANGES.

New Company.

The well-known business of CHARLES CARR, bell founder, of Smethwick, Birmingham, has been formed into a limited liability company, and will be in a position to meet all the demands made upon its resources by increasing business. Mr. J. J. W. Carr will act as managing director, and we wish success to the future of the company.

Partnership.

Mr. W. HENMAN has taken into partnership Mr. THOMAS COOPER, and they will carry on business together at 31, Cannon Street, Birmingham.

Dissolution of Partnership.

Mr. WILLIAM H. HOLT's connection with the firm of WALTER HOLT & SONS, contractors, Windmill Road, Croydon, has ceased, the business now being carried on under the personal supervision of Mr. Walter T. Holt and Mr. Albert W. Holt. The style of the firm will be retained.

Removals.

The offices of the METALLIC PAVING AND ARTIFICIAL STONE COMPANY, Ltd., have been removed to Amberley House, 12, Norfolk Street, Strand, W.C.

MESSRS. ROTTMANN & Co. have taken additional premises at 25, Garlic Hill, Queen Victoria Street, E.C., where they will shew their latest novelties in wall decorations.

THE PREVENTION OF SMOKY CHIMNEYS.—At the show room of the Smokeless Fire Depot there is to be seen a new chimney top—the invention of Mr. E. P. Milne, of Wandsworth. It is designed to get rid of that nuisance which has ever been associated with the chimney—viz., the smoke going the wrong way.

IMPROVED SLATING.—A new patent slating is now being suggested from an Irish source in which the slates are cut at opposite corners in such a way as to give the same "lap" or protection to open joints as in ordinary slating, but only using half the usual quantity of slates. So confident are the patentees of the strength of their system that they are guaranteeing all work done in connection with it.

TORQUAY.—The Water Committee of Torquay have accepted the tenders of Messrs. Candy & Co., Heathfield, Newton Abbot, and Messrs. Sessions & Co., of Gloucester, for the supply of cement, bricks, &c., during the ensuing twelve months. That of Messrs. T. & W. Farmiloe, Westminster, has been accepted for the supply of lead pipes.

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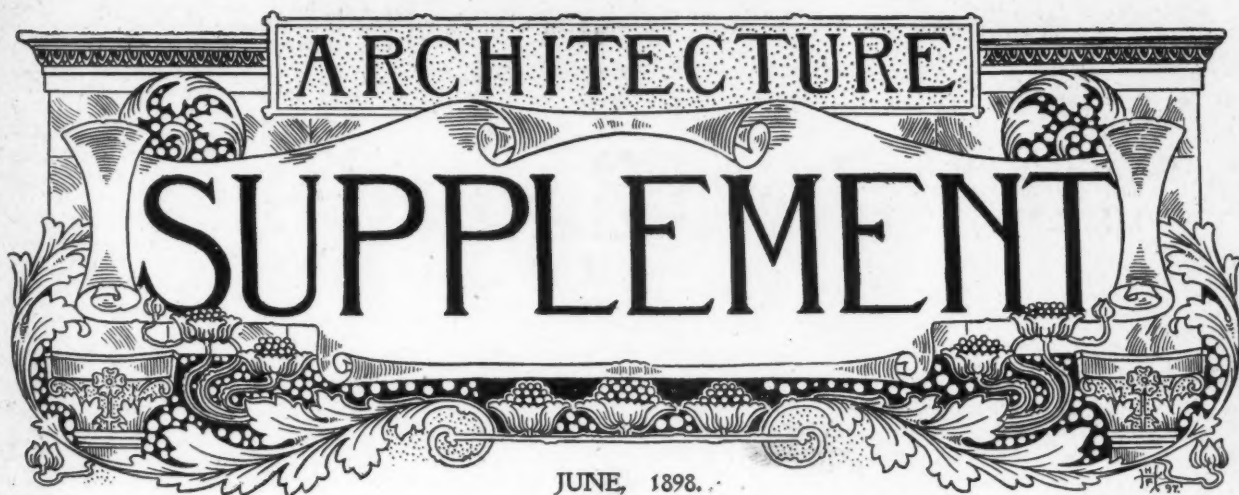
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Architecture Supplement. NOTES OF THE MONTH.

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English Architecture in the Royal Academy.

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Sculpture at the Paris Salons.

By LAURENCE JERROLD.

Some Churches in Southern Hanover, Brunswick and Lower Saxony.

By W. S. DIXON, M.A.

The North Porch of Wells Cathedral.

Measured Drawings by C. DIXON.

Photography for Architects.

By G. E. BROWN.

More Modern Metal Work.

By W. HENRY BROWN.

"Architecture" for May

Contained Articles on

Wells Cathedral;
Shooter's Hill House, Pangbourne;
The Northampton Institute, Clerkenwell;
Mr. Walter Crane's "Bases of Design."

Abbeys and Cathedrals.

The series of articles now appearing in ARCHITECTURE is lending enhanced value to the third volume. In the issue dated May Wells Cathedral was described and illustrated; Ely Cathedral has also been dealt with in an exhaustive article extending over two numbers—and others are in preparation. Lincoln, Canterbury, St. Albans, Winchester, Hereford and Gloucester have also formed the subjects of fully illustrated articles, and copies of the issues containing any of these special features can be had on application to the publisher.

The Twenty-Mile Radius.

The reversion of the London County Council to the practice, inaugurated at the beginning of its career, of insisting on the wages and conditions of London labour in the building trade being extended to a radius of twenty miles, is exciting some discussion, especially as the whole matter has been settled on the initiative of the men and without considering the Master Builders' Association at all. The latter had not demurred to the rigid insistence on the twelve miles radius which has prevailed for three years, and no arguments of real value were raised in favour of the change. The weight of experience was on the other side, and Mr. Howell Williams, a very practical contractor, who supports the Works Committee, said the change would increase the cost of asylums by ten per cent. Of course, the ratepayers will have to bear the burden, but the difficulties of builders are likely to be increased by the new rule.

Unprofessional Practices.

One of the ways in which local architectural associations can help to maintain the prestige of the profession is in the exposure of unprofessional conduct by those connected with the profession. And we are glad to increase this utility by giving publicity to an intimation with which the Leicester Society of Architects has favoured the Press. It appears that an "architect and surveyor" has written to a solicitor in Leicester offering to carry out commissions "at a minimum of cost, with sound work, and avoidance of extras, and in all cases with the best design." Doubtless he thought this would appeal to a solicitor, especially as he was willing to "pay twenty per cent. of my commission for introduction of business." But the man of law passed the communication to the local society of architects, and now it is receiving even further publicity. Such touting should be condemned with the severity usually

accorded business firms who would similarly subsidise architects for using their productions—meritorious or otherwise.

A Notable Roof.

The roof of the great hall of the Northampton Institute in Clerkenwell, to which reference was made last month, is noteworthy enough to merit a further reference. The steel principals are four in number, and space out at 19 ft. 6 in. apart, having a span of 66 ft. 8 in. A pitch of 45 deg. is given the roof, with wood purlins about 3 ft. apart. The main tie bar of the principals was curved to a radius of about 40 ft., the curve of the ceiling which they carried. We may add that the principals, each weighing about four tons, were of eight bracing, delivered in three parts, and rivetted up on the job before being hoisted into position. The roof over the gymnasium and swimming baths has also a pitch of 45 deg., with the wood purlins spaced similarly to those in the great hall. The steel principals are 16 in number, with a span of 50 ft. 6 in. and a space of 12 ft. apart.

Trade Activity.

Export business in paper-hangings did not shew any specially exciting features during April, but the trade was of a good all-round character. The figures for the four months of the present year shew an advance on those of the corresponding period of the two preceding years, and that, in a time when exports generally have shewn a falling off, must be accepted as a very satisfactory state of things. As given in the Board of Trade Returns, the exports for the four months ended 30th April have been as follows:—1898, £78,418; 1897, £72,185; 1896, £69,555. The quantities exported have been 31,037 cwts., 30,115 cwts., and 29,035 cwts. respectively.

Interior Lighting.

Mr. W. Eckstein read a useful paper on reflected light to the members of the Architectural Association the other evening—a paper which, as Mr. Banister F. Fletcher subsequently observed, was of special importance to architects whose practice was in a city where every available inch of light was necessary. Referring to reflectors, Mr. Eckstein said that where possible they should be fixed at the sill instead of half-way up the window, and be exposed directly under the sky. The light should be thrown up to the ceiling of the apartment, and, if this was polished in hard plaster, it would greatly assist in distributing the light throughout the room. Where volume of light was required direct, the light should be admitted vertically. The light passing

through a skylight was very much greater than through any vertical window, and consequently the light received from the horizontal pavement light was much stronger than from a vertical stall-board. Among the instances given of effective interior lighting was the fixing, 15 years ago, of Haywards' reflecting stall board lights in two fronts of ground floor premises. The result was that the light is very often too strong, and the clerks' desks have had to be placed so that their occupants did not face the front light. During the discussion reference was made to the Luxfer Prism Company, which is introducing an American system into London, in which the squares of glass are fitted together by a process of electro-glazing, which does away with the usual framework.

The Sheffield Society of Architects.

This association is one of the most vigorous of the provincial architectural societies, and has now 114 members. Active work of an educational character was conducted among the junior members and 43 students attended a course of ten lectures by Mr. Hugh Stannus, on "The Classic Elements of Architecture." In connection with local municipal affairs the influence of the Society has been wisely directed—the assistance of the Council having been obtained by the Corporation of Sheffield in connection with the competition for the police and fire brigade station, and it is stated that "the successful conduct of this competition has given more than usual satisfaction." Improved terms were gained by the Society in the School Board competition, and the year's work shewed conclusively that where a society is wisely officered good work can be done. Questions having been raised between individual members and the Sheffield Master Builders' Association, a meeting was held and resolutions adopted which are now the subject of discussion between the two bodies. Perhaps not the least important item in the report is the resignation of the hon. secretary, Mr. C. J. Innocent, who in four years has made the Society the active institution it is to-day. Since he commenced to act in that capacity the membership has doubled, and the balance in hand has increased from £4 to £121. Mr. R. W. Fowler has been elected president for the ensuing year, and Mr. W. C. Fenton has consented to fill Mr. Innocent's place.

Competition.

On page 3 we give some points from a recent discussion at a meeting of the A.A. on the subject of Competitions in connection with architecture. Generally speaking, the profession recognises that there is an educational value in these incentives, and that where a proficient assessor is provided architects can enter with safety and assurance. But here, again, is a difficulty, for where the name of the assessor is known and his particular trend is studied by the competitor there is a tendency for the latter to so conform his design to the views of the critic that an unfair favour may be established. Therefore, the opinions of those who are inclined towards anonymity in this important matter should not be entirely ignored. At the same time, opponents of competitions must remember that the only alternative is the election of architects by local authorities, &c., just as they elect their vaccination officers and dust inspectors.

A Visit to the House.

The lighting and ventilating arrangements of the Houses of Parliament were visited the other day by the members of the Civil and Mechanical Engineers' Society. Under the able guidance of Mr. Palfreeman, the resident engineer, the most ample

opportunity was afforded for examination of the means by which our legislators are supplied with fresh air and light. The appliances in question undoubtedly contribute materially to the remarkable powers of vitality exhibited during protracted sittings by members of the House of Commons, and they provide, not only for the warming of air in the winter season, but also for its artificial cooling during warm weather. Arrangements of the most complete nature exist for straining air admitted at all seasons of the year, for the removal of London fog by filtration through thick layers of cotton wool, and for imparting such a degree of humidity as may be most conducive to comfort. The exploration of the labyrinthine vaults and passages occupied considerably over two hours, and after inspection of the ingenious method by which light is communicated to the Houses without contributing to the vitiation of the atmosphere, the president, Mr. H. Coward, C.E., tendered the thanks of the Society to H.M. Office of Works, and to Mr. Palfreeman, for the courtesy to which they owe so interesting a visit.

The Extermination of Germs.

From an interesting pamphlet on "Mechanical Ventilation and the Extermination of Spores and Germs of Disease," by Mr. William Key, we learn that Mr. William Henman, A.R.I.B.A., the architect for the General Hospital at Birmingham, has invented a practical, easy and inexpensive method of dealing with dangerous organisms that pass into the outer air from infectious diseases hospitals. Mr. Key carried out all the arrangements for ventilating and warming, the volume of air impelled into the building being twenty millions of cubic feet per hour—all duly filtered, washed, humidified and warmed. It was found that by the patent screen for filtering and washing the air entering the building at the inlet the dust particles and germs were very nearly all removed. This fact was utilised by Mr. Henman in designing that screens should also be erected at all the air outlets from each ward. An arrangement comprising a small upper and lower trough is placed over and under each air outlet screen. Then the several troughs are connected by small pipes. Water, containing a small proportion of carbolic acid, is stored in a cistern within the building, but outside the wards, and, by pumping it up a foot or two, flows round the upper tubes, filling all the upper troughs, when all the screens become saturated with the carbolic acid and water trickling down their cords. All the outgoing air must pass through these destructor screens, when 90 per cent. of the spores and germs will be caught up and instantly destroyed by the corrosive action of the acid. Protection by patent has been obtained for this method of extermination, which is certainly of great utility in considering the health of the people.

The Workmen's Compensation Act.

The fact mentioned by the President of the Slate Merchants' Association in connection with the Workmen's Compensation Act, is not the only example of the increased responsibility now incurred by employers connected with the building trade. At a meeting of the Border builders, recently held at Galashiels, it was said that the rates for builders were 22s. 6d. per £100 of wages paid, and for saw-millers from 25s. to 45s. After considering the matter, it was resolved to form a company, with a capital of £1,000, in 1,000 shares of £1 each share, to carry with it a guarantee of £10, such guarantee to be called up, if necessary, for meeting claims for which the premium income and reserve and issued capital might be insufficient. It is felt that

this will meet the requirements of the district, in which hitherto very few accidents have occurred.

Building at Birmingham.

Some considerable activity prevails in the building trade of the Midlands, and at Birmingham several important works are on hand or have just been completed. A new art school is in contemplation, and the Corporation is seeking power to borrow £38,000 for carrying out various municipal works. The Norwich Union Fire and Life Assurance Societies have just entered into possession of the building once occupied by the Birmingham Liberal Club. This was a red brick and terra cotta structure erected in 1884 at a cost, with the site, of £70,000. It was recently purchased by the new occupants for £40,000, and Messrs. Cossins, Peacock & Bewlay, the original architects, have adapted it to commercial purposes. A new Gothic doorway with stone mouldings, in the style of the other arched work of the exterior, has been constructed in Congreve Street, and the office furniture is of oak and designed to harmonise with the architecture. For this we believe Messrs. Chamberlain, King & Jones were responsible.

Patent Glazing.

Among the many patent systems of glazing which have been introduced during the last twenty-five years the "Eclipse" method seems to have been greatly favoured by railway companies, corporations, and school boards throughout the country. Its leading features have been previously described in our columns, but its advantages are so great that no apology need be given for the present reference. It is claimed that an experience of fifteen years of the tin-lead metal which forms its distinctive character in such towns as Sheffield, Woolwich and Manchester proves that it is imperishable and entirely unaffected by atmospheric action. The glazing is absolutely watertight, and no breakage can result from expansion or contraction. Another important point is that the steel bar being first coated with a rust-preventing preparation is covered with strong tin-lead metal; or, if preferred, the "Eclipse" metal is equally well adapted to a wood bar. As the metal "beds" close to the glass all dirt and dust is kept out, thus giving this patent glazing a value which is not possessed by some other methods.

The Blackwall Tunnel.

On May 22nd, 1897, and thereabouts, the newspapers were full of articles about the Blackwall Tunnel, then opened for the convenience of dwellers on either bank of the Thames below the Tower Bridge. During the year it has not only demonstrated its usefulness and reflected credit on the contractors, Messrs. S. Pearson & Son, but proof has been given of the excellent material supplied by the many firms whose productions were requisitioned in the work. The tiles with which it was lined have not only remained without stain, but have continued to hold fast to the wall in a very satisfactory manner. These were the two points regarded as essential by the engineer, and after many experiments Messrs. T. & R. Boote, Limited, produced such a tile and secured the contract—not a small one, seeing that the number used was 757,920. They are 9 inches long, 3 inches wide, and 1 inch thick with a patent keyback. Equally good results have attended the glazed bricks lining the approaches to the tunnel, and which were supplied by three firms—Messrs. John Hall & Co., Messrs. Joseph Brooke & Sons, and the Farnley Iron Company.

ON COMPETITIONS.

UNDER the presidency of Mr. Hampden W. Pratt, President, the members of the Architectural Association recently met at the meeting room of the R.I.B.A., 9, Conduit Street, W., to hear a paper by Mr. B. Creswell, on "The Morality and Economy of Competitions," which he introduced with a historical survey of the many committees that had dealt with the subject since 1838, when the Institute debated the question, as it did again in 1858, in 1871 and 1872—and, in later years. In England alone, more than half the competitions are not advertised or noticed in the professional journals, and in Ireland and Scotland the tendency is to confine competitions to those respective countries.

Looking at the files of a professional paper for the years 1894 and 1895 Mr. Creswell found seventy-one advertised public competitions, the average value of the buildings for which the designs were invited being £9,000, so that the total value was about £324,000. The average value of the first prize was £56, and a sum of £52 was divided in smaller prizes. It had been ascertained that the average number of competitors was forty. In estimating the expense the author of the paper put the actual cost of making the drawings at £30 for an average case, or eight drawings at £4 each. This figure gave an average expenditure by architects of £1,200 upon each competition, or an out-of-pocket loss in each year of £43,200—and this the result of the examination of the advertisements in one leading journal only.

Upon this basis Mr. Creswell denounced the system of competitions as "commercially rotten and unsound"—economically a "monstrous anomaly," disastrous to the status of the practitioner and enervating to the art itself. Of course, he rightly exempted public competitions for national and monumental buildings from the "wild tumultuous disorder of the common herd of competitions."

With the class of people who acquired the right of selection under the competition system Mr. Creswell has no sympathy. They "are not merely ignorant, but they are saturated with the most blatant forms of vulgarity." Moreover, the system did not wholly do away with favouritism, and it could not fairly be urged that it enabled men to make their talents known. A young man had to compete forty times for every first award he won, and those waste drawings, accumulated for a period of twenty-five years, would pave a road from London to Grantham.

In the subsequent discussion, Mr. Aston Webb emphasised a strong point made in the paper as to the submission of works to what had been called the "crass ignorance of the grocerman." A qualified assessor was, however, a recognised factor in most competitions, and where there was no assessor, architects should decline to compete. He would not wholly condemn the system which had produced the Houses of Parliament and St. George's Hall, Liverpool; at the same time he urged architects to insist upon conditions being fairly and properly laid down.

Mr. E. W. Mountford (whose Northampton Institute, at Clerkenwell, was illustrated in the last number of ARCHITECTURE) thought that competitions were useful to young men. Assessors should be selected with care, and competitors should insist upon knowing the conditions before competing. Then the number of unsatisfactory results would be fewer than at present. He was of opinion that competitions had resulted in better buildings and better work generally.

Mr. Beresford Pite urged that competitions cultivated the faculty for design which architectural students did not sufficiently

practise. The knack of winning competitions, which some members of the Association possessed, was solely acquired by study and persistent practice. He suggested that the Institute should be prepared to offer the services of assessors to competition committees gratis on condition that the Institute had the opportunity of issuing conditions.

Mr. G. H. Fellowes Prynne said competitions existed in every branch of work in Art, and there could be no objection if competitors made true Art the object of their efforts, instead of only monetary considerations. In regard to premiums, it was only fair that some should be offered and, if possible, divided amongst a large number of the competitors.

Mr. Creswell was accorded a hearty vote of thanks for his paper which, although not offering much to the solution of the difficulty, had provoked an earnest discussion.

THEATRE PLANNING.

AN interesting visit was recently paid by the members of the Architectural Association to the Crown Theatre at Peckham, which has been designed by Mr. Ernest Runtz, who contributed to the value of the occasion by an explanatory address, in the course of which he said:—

To my mind there are three important points to be borne in mind in planning a theatre, apart from those of emergency exits and protection against fire, and these are purely commercial points. They are as follows:—

(1) The stage and its accessories should be so planned and of such dimensions as are suitable for the class of entertainment intended to be given, and the comfort of the artistes should be studied.

(2) The auditorium should be planned with a view to giving the public absolute comfort both as regards seeing, hearing, seating accommodation and general surroundings.

(3) The accessories to the auditorium, such as the foyer, saloons and retiring rooms, should be made attractive, in order to give opportunities for social intercourse and variety during the intervals, and the opportunity of obtaining light refreshment quickly and efficiently served in apartments refined in character, and quite removed from the generally accepted idea of a public-house bar.

I have endeavoured to carry out my principles in this building. I believe we shall have one of the finest stages in or out of London, its dimensions being as follows:—140 feet in extreme width and 40 feet in depth; a scene-painting room for three frames, and seventeen dressing-rooms. The auditorium is 62 feet in width by 59 feet in depth, and 48 feet in height to the ceiling, whilst the accessories to the auditorium cover a larger area, and I hope are planned in a simple and direct manner. With regard to the decoration of the auditorium, I may state that the title of the "Crown" has suggested a wide scope for allegorical treatment. The imperial crown of our Queen embraces the world, and the sun never sets on her dominions; hence, in the design for the auditorium ceiling will be found painted panels by a young and rising exhibitor in the Academy, Mr. Charles Buchel, representing the Colonies of England surmounted by their arms, above which figures holding the crown, with a symbolic sun above, are placed. Intermediate panels, indicative of Art, Music, the Drama and Literature, also find a place, and in the frieze over the proscenium opening it is intended to have a conventional painting of England and her children. Again, the decorative wall-paper has been designed with the crown intertwined unobtrusively, but still an integral feature, and I am sure I am not the only one in this room who will admire Mr. Albert C. Breden's artistic efforts in this direction.

IRON & STEEL BUILDINGS.

WITHOUT questioning the initial strength of buildings in which iron and steel largely predominate, much apprehension has arisen (particularly in America, where this kind of building is practically universal) as to the durability of the metal employed. They are able to withstand all vibration, &c., but oxidation sets in so rapidly when iron or steel is exposed to atmospheric influences, unless frequently coated with paint, that the ravages of rust have been feared in metal building parts concealed from view.

In such matters experience and ocular demonstration must be regarded as greater than theory, and, owing to the demolition of the post office at Chicago, such evidence has been afforded. This building was erected in 1872-6, being thoroughly fireproof, with granite walls, cast iron columns, iron beams, corrugated sheet iron floor arches, with concrete top covered with tiles, corrugated iron laths, and iron roof frame work covered with slate. During the process of demolition frequent inspection was made by engineers interested in noting what ravages had been made by rust. The results are thus set forth in an American contemporary:—

The corrugated lath taken from the partitions was found only slightly rusted from actual contact with the moisture of the mortar. It presented no evidence of progressive and continuing rust. The side toward the partition was almost without deterioration. The corrugated sheets taken from the floors were of poor quality and exhibited numerous defects, clearly of mechanical origin, but showed no damage from rust. The upper side, on which concrete had been laid, shewed bright metal when the adhering cement was scraped off. The under side, which had been painted, was well preserved. Pieces of the corrugated sheets taken from positions in which concrete had not been filled, leaving hollow spaces, had not sensibly rusted when exposed to such cavities. The beams and columns were all found in excellent condition, with even less indication of rust than would be shown if they had been lying for a short time in a builder's yard.

A notable feature demonstrated was the fact that all iron work exposed to cement had been well preserved, indicating the indestructibility of metal foundations imbedded in cement. The metal lath on partitions covered with lime mortar had been slightly attacked by rust; but the process of oxidation had only been temporary, and not indefinitely continued, as might have been presumed. The only places shewing deep-seated rust were a few locations in the roof, at which points there had evidently been leakages of long standing, but even in these instances the strength of the metal parts had not been materially affected.

The result of the inspection of the iron salvage from this building was particularly gratifying to those who use sheets in interior construction, against which a prejudice has existed because of their presumed liability to rapid destruction by rust owing to their thin body. The makers of wire lath have also been benefited by the demonstration of the very slight ravages of rust. It seems reasonable to presume that, if practically no damage was found after twenty years, the life of the metal parts of a building could be considered practically unlimited. Importance is attached by engineers from whom this information has been obtained to the fact that the iron used in this building had been painted before it was covered. Attention is also drawn to the character of the columns used. They only supported the structure, and did not serve at the same time as conduits for water, steam or gas pipes or electric wires as do the steel columns now so generally employed.

THE RISE OF THE LIFT.

Messrs. R. Waygood & Co., Ltd.

HIGH rents in London and other large cities have led to the erection of high buildings. Horizontal extensions are too heavy a tax upon ordinary business resources, and the result has been to develop



THE FOUNDER OF THE FIRM.

upwards to an almost alarming height. The weary ascent of stairs was too much for ordinary mortals, and but for the development of "lifts" business calls on the topmost storey would have been a kind of infliction which only the most persistent people would have tolerated. That such innovations as rapid and noiseless means of conveying people from floor to floor would be necessary was not universally recognised until comparatively a few years ago, and it is to one man perhaps more than any other that such an innovation has achieved such a remarkable recognition to-day. The city office without the lift is almost as out of date as a public dinner without dreary speeches. It has become recognised as an institution, and instead of allaying prejudice against its use modern makers are merely concerned with the particular advantages of their own special designs. Into those matters we do not propose to enter, but only to record the personal history and mechanical principles that have lifted one notable house to the very top of the trade.

Richard Waygood was a general engineer in Dorsetshire more than half a century ago, working in a business of long standing and ever quick to recognise new developments and to enter into fresh fields of enterprise. Convinced that the Metropolis would prove a better centre for operations, he came to London in 1841, and commenced to make his reputation. The first works having been acquired by the London, Chatham & Dover Railway he migrated to Great Dover Street, S.E., in 1863. With him was Mr. Day, who had worked for him as a boy, and Mr. Green. Two years later this trio was joined by Mr. H. C. Walker. The business of R. Waygood & Co., as

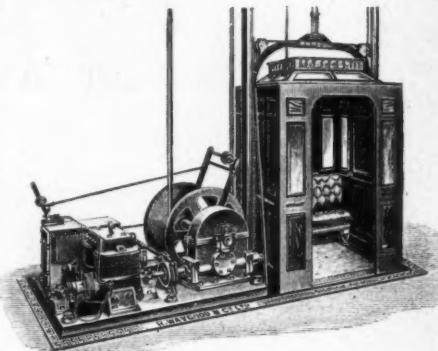
it was then known, consisted chiefly of general engineering, and a fair business was done with the Colonies in hydraulic presses, and sugar, flour and rice mill machinery, the total staff numbering about a score of men. To-day there are between 400 and 500 workers in the concern, engaged solely on the production of lifts, hoists, &c., and last year no fewer than 1,200 lifts were despatched from the works, while the activity of the present year, so far, promises to establish a record for 1898. Having inaugurated the lift department and convinced his firm that in that direction lay their greatest reputation Mr. Waygood retired in 1874, leaving Messrs. Green, Day and Walker to continue and extend the business. Mr. Day retired, and his son, Mr. C. Day, was taken into partnership, and, in 1890, Mr. E. P. Okeden joined the firm. In 1894, it was converted into a limited liability company, under the style of R. Waygood & Co., Ltd., continuity of management being maintained. All this while it will be seen that, despite the accessions, there was a continuance of the same guiding policy, and the result has been seen in a steady and uniform success.

Leaving the *personnel* of the firm to consider its productions, we would emphasise the fact that Messrs. Waygood make lifts of every kind, and have a long experience in both hydraulic and electric appliances. No definite assertion as to which description is the better can

be made, but the work they have done should give architects confidence in asking advice on the subject. So much depends on the location and the particular requirements for which the lift is wanted, that their knowledge should be of immense value to the profession in deciding upon the class of lift to be placed in a building. In fact, consultation between the architect and

the maker of the lift would frequently avoid disappointment when the appliance has been finally fixed.

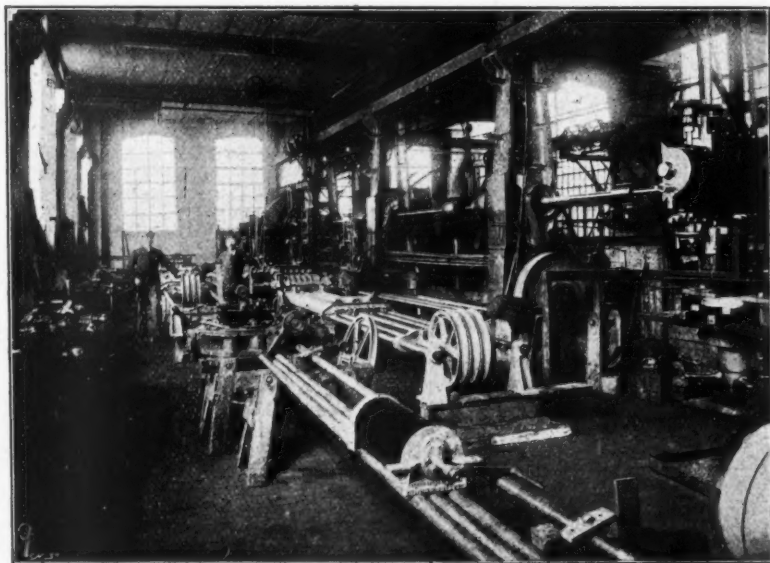
With regard to hydraulic lifts, we may say they are divided into two main sections—"direct acting" and "suspended," and in their extremely useful catalogue the firm



LIFT BY R. WAYGOOD AND CO., LTD.

give some valuable hints which will assist architects in considering the best arrangement to adopt under any given circumstances. Generally speaking, it may be said that direct acting lifts are safer than those which depend upon the support of chains or ropes. Waygood's patent balanced hydraulic lift is not only direct acting, but by avoiding overhead beams, sheaves, ropes and chains, can be fixed in the most prominent staircase without disfigurement or obstruction of the light, while its smooth and quiet working is yet another recommendation. The weight of the car and load being supported entirely from beneath, causes the whole strain on the machinery to be always in compression. The starting valve is a specially patented arrangement, and the whole mechanism is thoroughly under the control of the attendant.

Where there are one or two direct acting lifts working in the well-hole of a staircase, an open car is frequently preferred to a closed cabin or cage, as in the Liverpool offices of Messrs. Waygood & Co., Ltd., at North John Street, Messrs. Maple & Co.'s premises in the Tottenham Court Road, St. Bartholomew's Hospital, the Stock Exchange, the commercial Sale Rooms, and their direct-



R. WAYGOOD AND CO.'S FITTING SHOP.

acting lifts are used by the Right Hon. Marquis of Salisbury, K.G., His Grace the Duke of Wellington, and in the houses of other noblemen.

For the working of passenger lifts in flats, offices, hotels, &c., very little space is gene-

stone, and several electric lifts for Messrs. Pattison's new premises.

"DANVILLE ASBESTIC" wall and ceiling plaster will be used in the Memorial Church

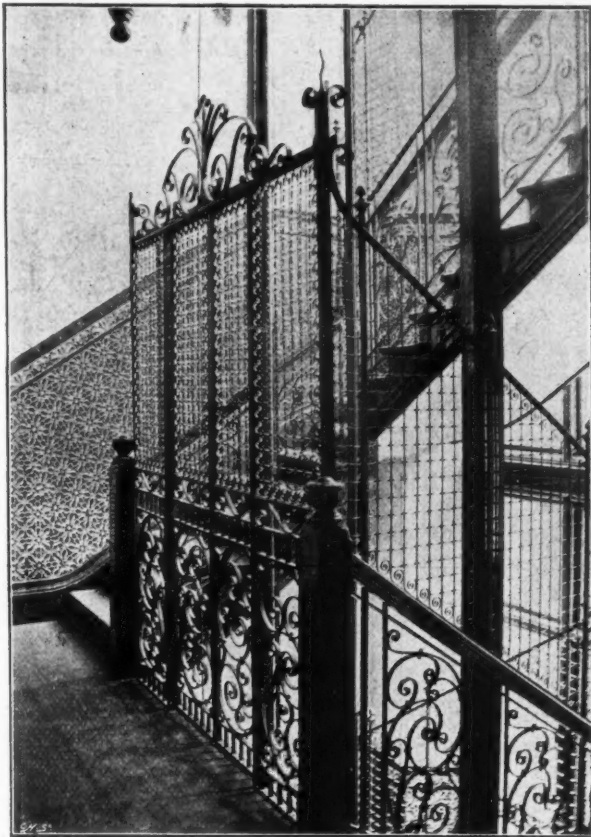


Export Business.

EXPORT business in cement as chronicled in the Board of Trade returns must be regarded as satisfactory, during April the quantity exported being 29,738 tons, valued at £56,491, as compared with 30,150 tons, valued at £49,174, in the corresponding month of 1896. Looking at the first four months of the year the total value of the exports was £203,591 (114,339 tons) as compared with £199,948 (123,436 tons) in the same period of last year, and £203,591 (108,926 tons) in the first four months of 1896. Glancing at the various destinations to which the cement has gone the British East Indies has been the best market, having taken 21,088 tons up to the 30th April, as compared with only 13,523 tons two years ago. The United States comes next with 15,173 tons—about half the receipts of January to April, 1896. Australia shews an upward tendency, and business with Canada is better than it was last year. So far as statistics shew the cement trade has little cause for complaint.

Slate Merchants' Association.

THE National Association of Slate Merchants and Slaters has held a half-yearly meeting at Furness Abbey, under the presidency of Mr. W. R. Thompson, of Dewsbury. There were about a hundred members present, and papers were read by Messrs. Eames (Bangor), F. W. Spink (Hull), Starkey (Leicester) and S. Atkinson (Leeds); the hon. sec., Mr. J. Townsley (Hull) presenting a report shewing considerable progress by the Association, and in his presidential address Mr. Thompson said the question of working rules in the trade was becoming of more importance than the wage question, and the Association would have to consider how intolerable demands should be met. With regard to the Workmen's Compensation Act he advised members to protect themselves by insurance, and to recoup themselves for this outlay by putting ¼d. per hour on all work

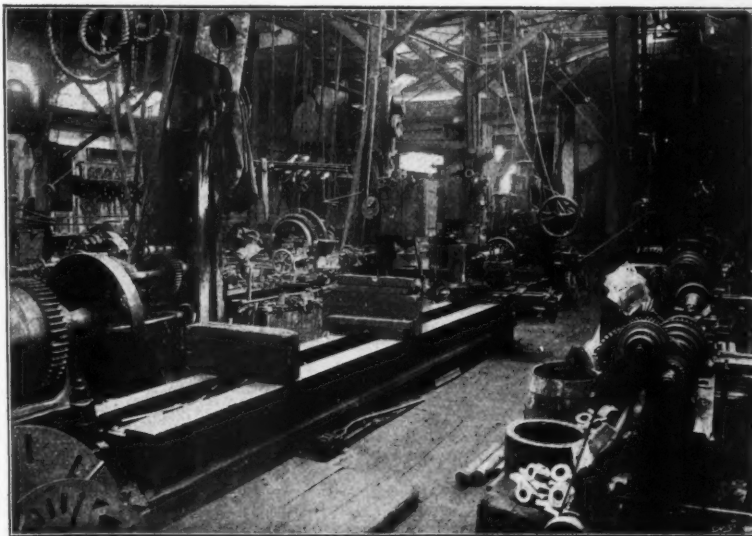


ORNAMENTAL GATES FOR LIFT.

rally available for the machinery, and the firm have brought out several useful types of appliances for such situations, everything being done to secure a good and neat appearance as well as durability in wear and ease and safety in running. To particularise the many excellent types made by the firm would be invidious, but we would recommend the profession to obtain a copy of their "Guide to Intending Purchasers of Passenger Lifts," which will give readers much useful information and many valuable hints. That their experience is perhaps more extensive than that of many firms in their line of business, may be seen from the list of places where their lifts are at work, these including the principal hotels in the West End of London and the sea-side resorts in the United Kingdom, as well as the Hotel Métropole at Monte Carlo, the Grand at Cape Town, and the well-known Galle Face Hotel at Colombo. They have also supplied lifts to the Royal palaces in London and at Osborne, Windsor and Balmoral, and to the principal members of the aristocracy, while in more commercial places they will be found giving satisfaction and winning high praise. All the principal Civil Service and company stores, as well as the leading City houses, use Waygood's lifts, and so varied is the firm's knowledge of their business that architects may very profitably consult them as to the best types to adopt. The work they have in hand just now includes sixteen hotels, amongst them being the new London Railway Terminus Hotel, Hotel Grand Central, Hotel Russell, Pavilion Hotel, Folke-

on the site of the Charity Bazaar in Paris— notable because of the terrible fire last year.

MESSRS. B. FINCH & CO., LTD., have issued a fine new catalogue, which is greatly enhanced as a work of reference by the useful tables and other information it contains.



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and Winchester Cathedrals,*

In addition to equally fully illustrated articles on

R. Norman Shaw, R.A., George Edmund Street,
Kentish Architecture, Scottish Architecture, The
Renaissance in England, &c. In all

560 Pages and 619 Illustrations.**VOL. II. of "ARCHITECTURE"**

Has similarly noteworthy contributions on the

*Cathedrals of Canterbury, Hereford
and Gloucester and*

St. Albans Abbey

(See page 8).

"ARCHITECTURE" for JANUARY

Had profusely illustrated articles on

*Melrose Abbey and**The late Sir Henry Doulton.***THE FEBRUARY NUMBER**

Commenced the article on

Ely Cathedral.

Concluded in No. 26. This, the *Cambridge Express* said, was "illustrated by the most complete set of photographs and drawings we have seen in any publication."

**Decorators' Enamel.**

A GLANCE round at various decorating jobs now in progress throughout the country demonstrates more than ever the extensive use of enamel in place of ordinary lead paint and varnish. The word "enamel" is closely associated with the well-known firm of Aspnall's Enamel, Ltd., New Cross, and a natural enquiry occurs as to whether the same material as is supplied in the small tins is used for the more important and extensive heavy decorative work. We may mention, however, that they have an enamel specially prepared for this class of work, and known under the name of "O" quality. This is particularly adapted for decorating large interior surfaces, and whilst possessing the same qualities as the tin enamel from the point of gloss and appearance, it has an easy flow, and there is not likely to be any complaints of its dragging in any shape or form. It is a very quick dryer and sets with a hard brilliant surface. The covering properties are really notable, and there must be a deal of labour saved by the use of this material. This is a most important item, for after all is said and done, it is the labour which runs up the bill, and any saving in this respect should be appreciated by all concerned. The price of both the inside and outside qualities of enamel is very moderate, and the article is well worth a trial by even the most sceptical of latter day decorators.

Perry & Co.

AMONG the firms in the West End who have acquired a repute for reproductions of really high-class art, few have so long a lineage and so worthy a reputation as Messrs. Perry & Co., of Grafton Street. This house was established in 1756 in Fleet Street; it removed in 1817 to Bond Street; and in 1890 to the present fine premises, where is as grand a display of chandeliers, candelabra, brackets, pendants, and other appliances for lighting as can be seen anywhere. Our reason for mentioning Messrs. Perry & Co. under the above section is that their work is of a decorative character as well as having concern with the illumination of houses. Their chandeliers now help to make beautiful hundreds of the greatest mansions in the country, and in electric light fittings they are doing work of high artistic quality and workmanship. Every novelty in the arrangement of the light has been carefully experimented with, and their advice on such matters will prove helpful to professional men as well as to private clients.

Bedroom Furniture.

MR. AMBROSE HEAL is one of the leading designers of furniture, Mr. C. H. B. Quennell is an architect who thoroughly understands the principles of design, and Mr. Gleeson White is an eminent critic on artistic matter. A brochure in which this trio is interested warrants recognition, especially as it seeks to remove the popular conception of a well-known thoroughfare, viz., Tottenham Court Road. At one time this was the abode of unlovely furniture and trashy works generally. Now, thanks to the conceptions of such firms as Heal & Son, the reproach is being removed, and one needs only glance through this little pamphlet of 32 pages to recognise the excellent designs that can be obtained in that much-despised street. Mr. Quennell has sketched in a most effective manner some of the choice designs which

Mr. Ambrose Heal has conceived, and the comments made upon their styles and ornamentation by Mr. White should be read by architects, who are ever asked to advise on such matters. Apparently the materials employed in this furniture are well chosen, while the critic well sets out other virtues as consisting in "admirable proportions, harmonious design, and rigid economy of ornament." These designs have been made with a due regard to the teachings of sanitarians and the best notions of art, and the brochure deserves, as we have hinted, friendly consideration from those of our readers who are so fortunate as to obtain a copy.

**State of Trade.**

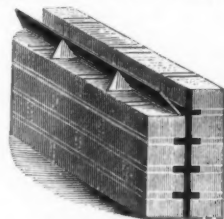
THE demand for bricks is as active as ever, and reports we have received from several parts of the country confirm the view that there is no likelihood of any accumulation of stocks for some time to come. All over the country building is going on at a very rapid rate, and there will be a great rush of trade for the remainder of the present year. On several important brick fields the stocks are lower than they were ever known to be at this time of the year.

New Catalogue.

AN extremely neat and effective catalogue has just been issued by Messrs. Stanley Bros., Ltd., of Nuneaton, to whose glazed bricks we referred in our last issue. This new list deals with garden tiles, flower pots, vases, statuary and terra cotta medallions—in all of which departments some capital patterns are illustrated. The tiles are made of the best blue Staffordshire clays, and are thoroughly vitrified and durable; the vases and medallions are in buff terra cotta and also in a terra cotta of rich dark-red colour, admirably suited to the destination of these goods. Although many well-known shapes and forms find a place in this catalogue, several new and effective ideas in their ornamentation are introduced, and Messrs. Stanley Bros. will doubtless be pleased to send a copy to interested readers.

"Tenax" Composition.

In a recent issue we called attention to the excellence of the "Tenax" rock building composition, which renders walls perfectly damp-proof, and we have since seen a list of additional towns in which it has been used with success. This makes a total of 172 towns and cities in the United Kingdom, including places of such interest to archi-



itects as Canterbury, Exeter, Guildford, Lincoln, Chester, Reading, Salisbury, St. Albans, Wells, and other towns of larger commercial importance. The composition is easily applied, a thin board being left in the joint of the brickwork till a height of about a foot has been reached. It is then drawn out, and the melted "Tenax" com-

position is rapidly poured in to fill up the cavity. Adhering with great tenacity it binds the bricks very firmly, increasing the strength of the wall, and proving a reliable foe to dampness. Mr. W. Briggs, of Dundee, is the sole maker, and supplies it at rates which should ensure its practically universal adoption. We give an illustration shewing how the composition is applied.



The Sanitary Institute.

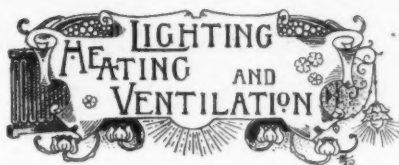
THE Institute's recent examination attracted a large number of entries. Out of 109 candidates at the examination for inspectors of nuisances, 64 have been certified as competent. In practical sanitary science there were 12 candidates, of whom the following were successful:—Messrs. A. Ackermann, 53, Victoria Street, S.W.; H. Bates, 100, Bunhill Row, E.C.; W. C. Henley, Dartmouth; J. Hipkin, Bedhampton, Havant, Hants; and G. T. Oliver, Stroud, Gloucester.

The History of Pottery.

THE oft-told tale of the discernment of Messrs. Astbury & Twyford in discovering the secret of the Elers, about 200 years ago, is repeated, in his own way, by Mr. Joseph Hatton in an interesting work just issued by the London publishing firm of Virtue & Co. This is called "Twyfords, a Chapter in the History of Pottery," and the titles of the chapters might have been taken from some of the author's popular novels—"The Romance of Bradwell and Burslem," "From Bath Street and the Abbey to Cliffe Vale," "History Repeats Itself," &c. These certainly do not read like the headlines of an ordinary commercial history, and perhaps claim to deal with a firm whose history is rather apart from the usual run of such works. Although the book contains little new information, the story is told in a very interesting way, while the photographic illustrations materially assist the author in his descriptions of processes and methods.

Twyfords.

JOSIAH TWYFORD, who discovered the secret of the Elers, died in 1799, having established a good business and a fine reputation, and the family has continued in the district, with probably the lapse of a generation, until the present time. Thomas Twyford, the father of Mr. T. W. Twyford, the present managing director, died in 1872, and his son took up the business with vigour, and introduced some valuable improvements in the art of the sanitary potter. He brought out the "National" basin, made all in earthenware, to displace the old pan closet and similar unsanitary systems. Then he introduced the "Unitas," which was the pioneer of "pedestal" closets, and led to a more general adoption of the plan of fixing the basins opened and exposed. That was in 1886; three years later Mr. Twyford invented the "Deluge," on the wash-down principle; and in 1894 a new departure was made, by which the contents of the basin are removed by syphonage. Mr. Twyford is as anxious as ever to develop the art of the potter, and we fancy a perusal of Mr. Hatton's book on the methods adopted will prove useful to the profession in more ways than one, for it contains many excellent hints and much practical information.



Mechanical Ventilation.

AMONG the many systems of mechanical ventilation and warming which claim attention Mr. William Key's plenary method has won considerable renown. More than that, the advantages thus obtained have been found most economical in acquisition, effecting a saving that, in itself, is a commendation. Briefly described, the method is as follows:—The air supply for the building is drawn from a point where it is of undoubted purity, and passes through an outer warming coil, thence through an air filtering, washing and humidifying screen. This screen remains thoroughly sweet and clean, trickling moisture and flushing doing this part of the work most effectually. Coming then into contact with coils that are clustered in batteries within the warming chamber, the air is properly warmed. It is then propelled into the main air-ducts and so passes into flues leading to each room.

Advantages of Mr. Key's System.

AMONG the advantages which are obtained by this plan we enumerate a few. The air to each room may be warmed to any temperature, independently of the others, the volume being also regulated or shut off altogether. As the pure air enters the apartment, so as to be directed to the ceiling, it forces out that which has previously been within the room. In this way we are assured the air of a room can be renewed six to fifteen times per hour, without any draught being experienced. We would remark, too, that by the screen the excess of moisture which is generally present in the air during summer weather is removed, while, by the same medium, the moisture necessary for healthy respiration is restored during dry east winds. It remains to be added that Mr. Key's experience of this subject is wide and extensive, and that architects and others wishing for further particulars of his method should apply at his London office, Mansion House Chambers, Queen Victoria Street, E.C.

Uppingham School.

THE drawing exhibited at the Royal Academy, shewing Mr. T. G. Jackson's design for Uppingham Schools, Rutland, has served to draw attention to the excellence of the arrangements. The Science Schools were recently opened and the gas work of the place deserves passing recognition. It was carried out by Messrs. Strode & Co., in wrought-iron tubes. The gas pressure is regulated with one of their patent governors, and a complete system of control is effected with regulating valves in the various rooms. In the Museum the pendants are fitted with incandescent burners, and in the Lecture Theatre are regenerative gas lamps with a special sliding arrangement to enable them to be lowered for cleaning or lighting purposes.

The "Ventilo" Radiator.

THE "Ventilo" radiator with silver-plated finish is being supplied to the Lancashire and Yorkshire Bank at Radcliffe, and also to a large number of similar buildings. Being designed in plain lines, a very high polish can be obtained on the surface so that it may be finished in silver plate, electro, copper or brass bronze. In the radiator no perishable packing is used, and the tubes being elliptical in section with a convoluted front, present a large heating surface in proportion to the space occupied.

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Samples and Prices submitted on application. Illustrated
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BUILDING NEWS.

THE following are some of the most interesting contracts signed since our last issue. The Editor will be pleased to receive particulars of the progress of these works and intimation of important contracts to be given out within the next few weeks.

England..

AXMINSTER.—Residence. W. J. Granger, Whimble. £4,495. Messrs. J. W. Rowell & Son, Newton Abbot, architects.

BRIDLINGTON.—A new sawmill, shops and warehouses on the east side of St. John Street, Bridlington, are to be erected by Messrs. Blackburn & Son.

BEDFORD.—School. J. Wharton. £7,041. Mr. Henry Young, Midland Road, architect.

COVENTRY.—Chapel. C. Garlick. £2,800. Messrs. Harrison & Hattrell, 26, Hertford Street, Coventry, architects.

CROMER.—Public conveniences, Blythe, Foulsham. £1,325. Mr. A. F. Scott, district surveyor.

FARNHAM.—Four cottages. Crosby & Co. £1,198. Mr. J. Alfred Eggar, 11, West Street, Farnham, architect.

KING'S LYNN.—Rebuilding house and shop. Collins & Barber, Downham Market. £1,330. Mr. H. J. Green, 31, Castle Meadow, Norwich, architect.

MANOR PARK, E.—Six shops. C. Lawrence. £5,200. Mr. R. B. Martin, 103, Plashet Grove, East Ham, E., architect.

LONDON.—Board school. Stimpson & Co. £24,860 (recommended for acceptance).

MANCHESTER.—Hotel. Burgess & Galt. £4,510. Messrs. Earnshaw & Son, architects.

RAMSGATE.—Twelve almshouses. J. H. Forwalk. £3,855. Messrs. Osborne, Langham & Cole, architects.

CHATHAM.—Theatre. C. E. Skinner. £16,100. Mr. G. E. Bond, Rochester, architect.

CLACTON-ON-SEA.—Holiday home for the Sunday School Union. J. S. Hammond & Sons. £6,599. Mr. Charles Bell, 3, Salters' Hall Court, Cannon Street, E.C.

HEYWOOD (Lanc.).—Tower at a factory. W. A. Peters & Sons, Townhead saw-mills, Rochdale. £3,614. Mr. C. H. Openshaw, Derby Chambers, Fleet Street, Bury, architect.

LEYTON.—Public-house. P. Hart. £4,151. Messrs. Foulsham & Riches, 3, Crooked Lane, King William Street, E.C., architects.

HAMPSTEAD.—Fireproof floor and other work at the electric lighting station, Lithos Road, Finchley Road, N.W. R. A. Yerbury & Sons, West End Lane, Kilburn, N.W. £572.

FINCHLEY.—Mortuary chapel. Gough & Co., Church Road, Hendon. £3,054. Messrs. Forsyth & Maule, 16, Great Marlborough Street, W., architects.

MANUFACTURERS

Are invited to forward copies of New Catalogues, etc., to

THE EDITOR OF

ARCHITECTURE SUPPLEMENT,

immediately upon publication.

Publishing Office of "Architecture," Talbot House, Arundel Street, Strand, W.C.

WAVERTREE.—Technical institute. Morrison & Sons. £5,563.

BLETHINGLEY.—Workhouse. F. G. Minter, Westminster. £15,587. Mr. Fredk. Elliff, Caterham, architect.

WEST HAM.—Superstructure of lunatic asylum. Pattinson & Sons, Ruskington. £198,211. Mr. Lewis Angell, architect.

NEWCASTLE (Staffs.).—Some notable oak seating has been recently placed in the Church of St. Giles, Newcastle, Staffs, from the designs of Mr. John Lewis, an architect of the town. The whole of the seats are of oak, and those allotted to the Mayor and Corporation are elaborately carved. Messrs. Jones & Willis have done the work at a cost of £1,000.

IPSWICH.—The borough surveyor of Ipswich, Mr. E. Buckham, M.I.C.E., having prepared plans for a new central fire brigade station, the tender of Messrs. T. Parkinson & Son, of Crown Street, Ipswich, has been accepted for doing the work at a cost of £3,850.

TAUNTON.—The new almshouses built by Mr. T. H. Moggridge, of Queen Street, Taunton, from the designs of Mr. J. H. Spencer, are now ready for occupation. They are built of red Bridgewater brick with some Bath stone dressing.

NUNEATON.—A new bank has been built in the market place by Councillor Thomas Smith, from the designs of Messrs. Wood & Kendrick, of West Bromwich. A great feature of the work is the terra cotta adornments. Mahogany fittings were supplied by Messrs. Bennett Bros., of Birmingham.

SOUTHPORT.—The new Church of Emmanuel at Southport has just been consecrated. Mr. R. Bassnett Preston, of Manchester, was the architect; Messrs. Pearson & Brown contracting for the chancel woodwork, and Messrs. Earp & Hobbs for the carving throughout the Church.

Wales.

CARDIFF.—Rebuilding shop. H. Gibbon, Richmond Road. £1,200. Mr. S. Rooney, Quay Street, architect.

TONYPANDY.—Library. Morgans & Williams. Messrs. Griffiths & Jones, Tonymandy, architects.

Scotland.

GREENOCK.—Constructing sewers, &c. W. Pollock, 166, London Road, Glasgow. £3,508.

EDINBURGH.—The new Royal British Hotel at Edinburgh is now complete. More than £15,000 has been expended in its erection. Mr. J. Macintyre Henry, 7, South Charlotte Street, Edinburgh, was the architect. He is now engaged on some extensive additions to the Royal Hotel in the same city.

"ART POTTERY IN LAMBETH,"

a finely Illustrated Account of the Life and Work of the late

SIR HENRY DOULTON,

appeared in "ARCHITECTURE" for January.

A few copies of the FIRST VOLUME of

Architecture

may be had, bound in black morocco, cut and gilt top, lettered in gold, at 15s 6d.; carriage

6d. extra.

580 pages. 619 Illustrations.

BUSINESS CHANGES.

The business of Mr. JOHN THOMPSON, of Peterborough, whose death was announced in our last issue, is to be continued by his two sons, Messrs. Thomas John and Walter Stuart Thompson, jointly with Mr. Walter Hill, under the title of John Thompson & Co.

Extension.

Messrs. H. HERRMANN, Ltd., the well known manufacturers of wood carvings, have opened a new and extensive furniture factory in Dyer Street, Hulme, Manchester.

Removal.

Mr. G. P. ALLEN, architect, has removed from Great Ormonde Street to Adelphi Chambers, 6, John Street, Adelphi, W.C.

A JACOBAN MANSION.

THE West Ham Technical Institute is approaching completion, and the Free Library of the borough will shortly be moved thither from its present home at Rokeby House, Stratford. Rokeby House itself is to be demolished, as was the palace of King James in the neighbouring parish of Bromley a few years ago. Then, thanks to Mr. Ashbee, the fine old mantelpiece was saved; but in the present instance the oak panelling and armorial bearings have already been removed. The house is supposed to have been built by Sir John Rokeby, who was knighted in the reign of James I., probably between the years 1608 and 1616. There is little of interest in the house itself, save the coat-of-arms to which we have referred, and that surely should be placed in the Kensington Museum in close proximity to the mantelpiece from Bromley. They refer to the same period, and each is a memory of really notable buildings that have existed in the East End of London—a district that is rapidly losing all associations with the past.

AN ARCHITECT IN PARLIAMENT.

THE South Norfolk election has had an interesting termination in sending to Parliament an architect by profession. Mr. A. W. Soames, the new M.P., is the youngest son of the late Mr. W. A. Soames, of Brighton, and now enters the House of Commons after three attempts to gain that eminence. His professional knowledge should find plenty of scope in the House, and architects generally will hope that he may be useful in lightening the darkness that there prevails in architectural matters.

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